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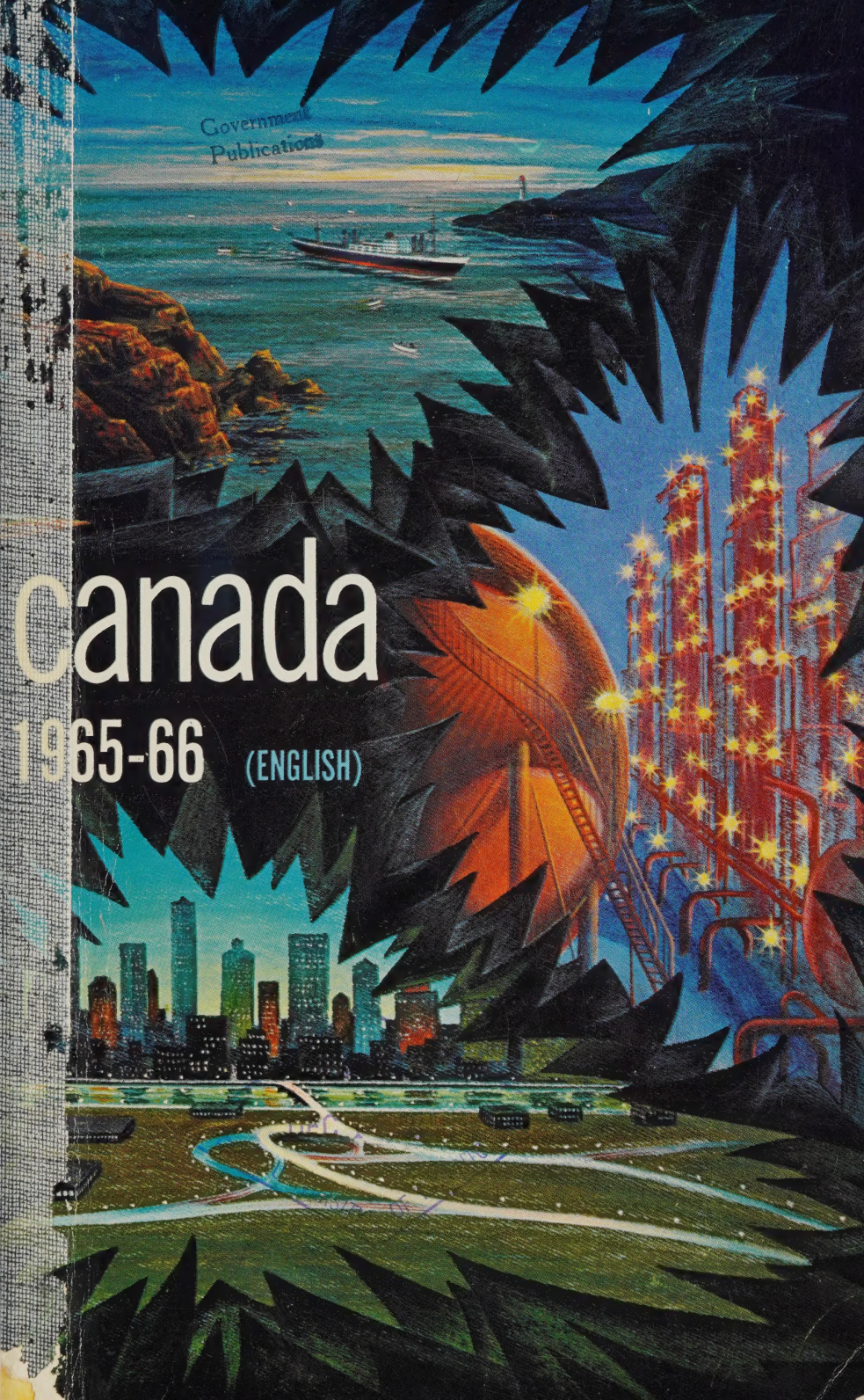
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Government  
Publications

# Canada

1965-66 (ENGLISH)





#### THE NATIONAL FLAG OF CANADA

*The proclamation of the new Flag was signed by Her Majesty Queen Elizabeth II on January 28, 1965, effective February 15. On the latter date the flag was raised at noon throughout Canada and over Canadian institutions abroad.*



# CANADA 1965-66

*The Official Handbook of Present  
Conditions and Recent Progress*

*Prepared in the*

Canada Year Book, Handbook and Library Division  
Dominion Bureau of Statistics  
Ottawa.

*Published under the authority of*

The Honourable Mitchell Sharp  
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# Foreword

*Canada 1965-66* is the 36th annual edition of the *Canada Handbook*. With textual material, statistics and illustrations it seeks to portray the economic, social and cultural developments of the Canadian nation.

Apart from its special features, *Canada 1965-66* draws on the same official sources of the Dominion Bureau of Statistics and the various departments of the Government of Canada that contribute to the larger reference volume, the *Canada Year Book*. The illustrations are selected from a wide range of governmental, commercial, press and private sources.

While the standard series of articles on Canada's primary and secondary industries, its society and culture, are completely new in their treatment in the light of recent developments, this edition also includes such special features as *The Canadian Economy, 1964*, *Current Trends in Industry*, and *Economic Goals for Canada*. There are also 18 illustrations in colour of the wild flowers of Canada.

*Canada 1965-66* was produced by Miss Helen Champion in the *Canada Year Book*, Handbook and Library Division of the Dominion Bureau of Statistics, under the direction of Dr. C. C. Lingard, Director of the Division.

*Walter E. Duffett.*

Dominion Statistician.

Dominion Bureau of Statistics,  
July 10, 1965.

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Colour reproductions of the wild flowers of Canada were selected from Canada's National Collection of Nature Photographs, sponsored by the National Museum of Canada and the Canadian Wildlife Service. Photographers represented are: Ruth A. Buck, Mosher, Ontario; William I. Campbell, Waterdown, Ontario; Mary W. Ferguson, Toronto, Ontario; Russell J. Gee, Toronto, Ontario; John B. Giles, Hamilton, Ontario; Margaret A. Gilmour, Hamilton, Ontario; James W. Gravestock, Lindsay, Ontario; Fred Hanmore, Scarborough, Ontario; Agathe Hardy, Quebec, P.Q.; S. D. MacDonald, Ottawa, Ontario; Valerie Joan May, Cultus Lake, B.C.; Dr. A. M. Revell, Edmonton, Alberta; Dennis Wesley Schmidt, North Surrey, B.C.; Robert R. Taylor, Regina, Saskatchewan.

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*Tulip time on the Driveway, Ottawa.*

Canada's Landscape

## Diversity of Climate, Soil and Physical Features Characterize the Land

Canada, the second largest country in the world, has an area of 3,851,809 square miles. It occupies the northern half of the North American continent (exclusive of Alaska and Greenland) and touches on three oceans, the Atlantic, Pacific and Arctic.

Uninhabited Middle Island in Lake Erie marks the southerly extremity of Canadian territory with a latitude of 41° 41' N; Cape Columbia, Ellesmere Island, the most northerly point, with a latitude of 83° 07' N. The most easterly point is Cape Spear, Newfoundland; the most westerly, Mount St. Elias, Yukon Territory.

Canada has five physiographic regions: the Canadian Shield, the Interior Plains and Lowlands, the Appalachian, Cordilleran, and Innuitian Regions.

### *The Canadian Shield*

The Canadian Shield covers approximately 1,850,000 square miles. It forms a vast crescent around Hudson and James Bays, embracing a major portion of the Northwest Territories, northern Saskatchewan and Manitoba, northern Ontario, much of Quebec and Labrador. Geologically, the Shield, which took its present form some 500 million years ago, is the oldest part of Canada.

This region is a massive upland or plateau, dotted with innumerable rivers and small lakes. It has little agricultural soil, but possesses a wealth of mineral resources, including iron, copper, lead, zinc, asbestos, potash and salt. The Shield also has abundant forests and great water power resources.

### *Interior Plains and Lowlands*

On the boundary between the Shield and the Lowlands are such large bodies of water as Great Bear Lake, Great Slave Lake, Lake Athabasca, Lake Winnipeg and Lake Huron. Good agricultural soils lie over the young and soft rocks of many areas of the plains and lowlands.

The largest lowland, that of the Interior Plains, constitutes the prairies of Western Canada and their wooded continuation to the north. The Northern Interior Lowlands include the Hudson Bay Lowlands south of Hudson Bay, the Foxe Basin Lowlands in and near western Baffin Island, and the Southern Archipelago Lowlands which occupy large parts of the more southerly Arctic islands. The Great Lakes-St. Lawrence Lowlands form two important areas in southern Ontario separated by the Frontenac Axis. The more easterly continues in Quebec on both sides of the St. Lawrence River and an isolated continuation forms Anticosti Island.

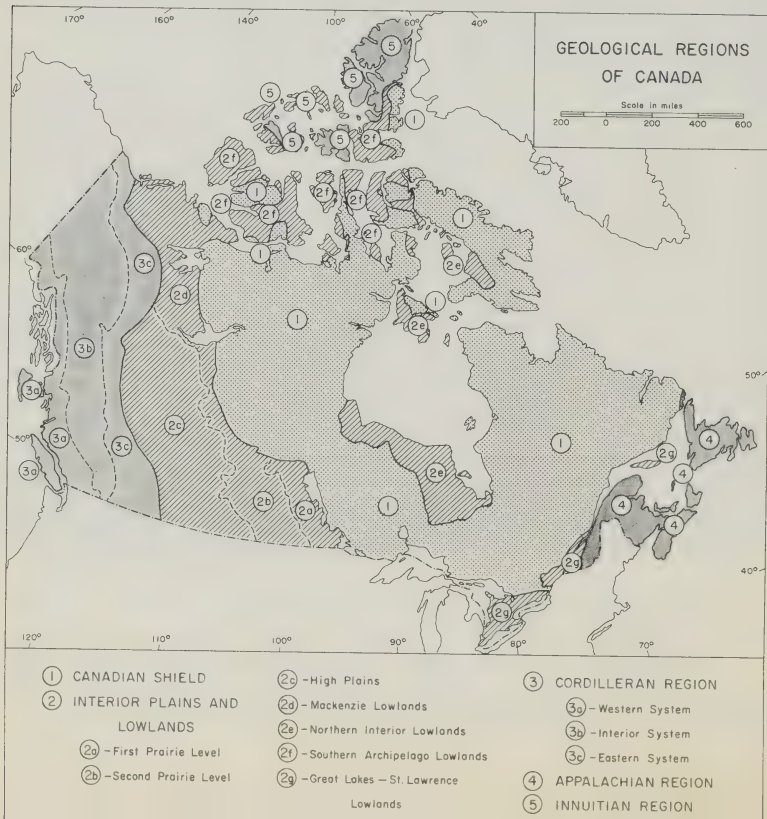
Although the St. Lawrence-Great Lakes Lowlands form one of the smallest physiographic regions of Canada, they contain some 60 p.c. of the total population and are the major industrial area. The land is, for the most part,

rich and fertile; the climate well suited to agricultural activity. However, the rapidly-increasing industrialization of southern Ontario and the Montreal area of Quebec is affecting these Lowlands. More and more factories, housing sub-divisions, and shopping centres are being built on this valuable agricultural land.

The Interior Plains contain the great grain-growing area of Canada. The flat, almost treeless land and the continental climate—warm, dry summers and long, intensely cold winters—make the region ideally suited to this type of agricultural activity. Under the rich, fertile soil lies another kind of wealth—a vast storehouse of coal, oil and natural gas.

### *Appalachian Region*

The Canadian Appalachians include the part of Quebec that lies south of the St. Lawrence River (except for the narrow strip along the river itself that is part of the St. Lawrence Lowlands), all of New Brunswick, Nova Scotia, and Prince Edward Island, the island of Newfoundland, and the tip of Labrador directly north of the Strait of Belle Isle. The Appalachians have been so eroded that only stumps of the mountains remain. The Canadian Appalachian area is made up of distinct regions with notably different physiographic characteristics. These regions correspond, for the most part, with provincial boundaries.





*Rich farmlands lie along the Red River, Manitoba. Narrow holdings ensure each farmer access to the waterway.*

The island of Newfoundland has a rugged surface. Most of the land is rocky and barren. The summers are cool and the winters relatively mild, the cold Labrador Current counteracting the moderating influence of the sea.

Almost all the settled areas of the island are on the coast, although the forested river valleys of the interior support a flourishing pulp and paper industry. Newfoundland also has mineral deposits, one of the most important being the medium-grade iron ore at Wabana, on Bell Island in Conception Bay.

Nova Scotia is almost an island, being joined to New Brunswick only by the narrow Isthmus of Chignecto. The peninsula is ringed with low, rounded hills. Much of the land is well forested. The principal agricultural areas lie near the Bay of Fundy and Northumberland Strait where the land is sheltered from the storms of the Atlantic. The mineral resources of Nova Scotia include coal, gypsum, and salt.

New Brunswick has an undulating surface. About 86 p.c. of the land is classed as productive forest. The chief agricultural lands lie in the valley of the St. John River.

The southern part of Quebec (the Eastern Townships and the Gaspé Peninsula) contains the highest mountains of the Canadian Appalachians. Approximately 40 p.c. of the world's asbestos is produced in Canada, while lead, zinc, and copper are mined in the Gaspé. Much of the region is heavily forested.

Prince Edward Island is also included in the Appalachian region, although it is not mountainous. It is covered with fertile soil. The island has a pleasant, moderate climate and is ideally suited to agriculture.

### *Cordilleran Region*

The Canadian Cordilleran Region, a belt about 500 miles wide, is composed of high mountains and lower plateaux and valleys. It comprises south-

western Alberta, all of British Columbia except its northeastern corner, almost all of Yukon Territory and the southwestern part of the Northwest Territories.

The individual mountain groups and plateaux are arranged in a complex pattern divisible into three parallel northwesterly-trending zones. In most places these zones are quite distinct and are called the Western, Interior and Eastern Systems.

The greater part of the Western System is composed of the high, rugged Coast Mountains along the mainland coast of British Columbia. Along part of the Yukon-Alaska boundary they are flanked to the southwest by the still higher St. Elias Mountains. Separated from the mainland by the Insular Passage are ranges forming Vancouver and Queen Charlotte Islands. The Interior System is a complex group of plateaux and mountains. The Eastern System is divided into the Northern Ranges and the Rocky Mountains separated by a plain and plateau along the Liard River. The slopes of the Cordilleran mountains are covered with dense forests—mostly Douglas fir and western cedar.

Like the Canadian Shield, the Cordilleran region has extensive and varied mineral wealth. Copper, lead, zinc, gypsum, asbestos, silver, gold, nickel, and many other minerals are found throughout the area.

While there is little agricultural land in the Cordilleras, a number of valleys in south-central British Columbia and the southern part of Vancouver Island are well suited to fruit, vegetable, and flower growing. Fine beef cattle are raised in the Alberta foothills and on some of the interior plateaux. In the Yukon, the long daylight hours of summer make for rapid growth of crops.

The climate of the Cordilleran region is extremely varied because of its broad range of latitude. In the extreme north of the region the climate is severe, with a short growing season and long winters. In the south, along the coast, the winters are mild and the summers warm. This coastal region has the longest frost-free season in Canada.

A considerable quantity of rain is carried in from the Pacific and deposited on the western slopes of the mountains. The eastern slopes and the interior plateau, on the other hand, are very dry and experience much wider ranges of temperature.

### *Innuitian Region*

The Innuitian Region is a mountainous area, stretching about 800 miles from southwest to northeast. It includes the most northerly of all the Arctic islands—the Queen Elizabeth Islands—(except for small parts of Devon and Ellesmere Islands).

Some of these folded mountains attain heights of between 3,000 and 10,000 feet. The name of the range comes from the Eskimo *Innuit*, meaning “the people”, which they use in referring to themselves. The climate here is so severe that exploration is most difficult.

The face of Canada has often been compared to a patchwork quilt, with its array of colours and textures. Certainly it is impossible to speak of a “typically Canadian” scene or a “typically Canadian” climate. There is almost endless variety of topography, vegetation, resources, and weather.

## Largest Islands

	(sq. miles)
Baffin.....	183,810
Ellesmere.....	82,119
Victoria.....	81,930
Newfoundland.....	42,734
Banks.....	23,230

## Highest Mountains

	(feet)
Logan.....	19,850
St. Elias.....	18,008
Lucania.....	17,150
King Peak.....	17,130
Steele.....	16,440

## Longest Rivers

	(miles)
Mackenzie (to head of Finlay).....	2,635
Yukon (mouth to head of Nisutlin).....	1,979
St. Lawrence (to head of St. Louis, Minn.)..	1,900
Nelson (to head of Bow).....	1,600
Columbia.....	1,150
Churchill.....	1,000

## Largest National Parks

	(sq. miles)
Wood Buffalo.....	17,300
Jasper.....	4,200
Banff.....	2,564
Prince Albert.....	1,496
Riding Mountain.....	1,148
Kootenay, B.C.....	543
Glacier, B.C.....	521

## Largest Cities

Metropolitan Areas (Estimated population June 1, 1964)	
Montreal.....	2,260,000
Toronto.....	1,989,000
Vancouver.....	828,000
Winnipeg.....	487,000
Ottawa.....	468,000
Hamilton.....	418,000

## Largest Lakes

	Total area (sq. miles)	Area on Can. side of boundary (sq. miles)
Superior.....	32,483	11,524
Huron, incl. Georgian Bay.....	23,860	15,353
Great Bear.....	12,275	12,275
Great Slave.....	10,980	10,980
Erie.....	9,889	4,912
Ontario.....	7,313	3,849

## Area: Provinces and Territories

	(sq. miles)
Quebec.....	594,860
Ontario.....	412,582
British Columbia.....	366,255
Alberta.....	255,285
Saskatchewan.....	251,700
Manitoba.....	251,000
Newfoundland.....	156,185
New Brunswick.....	28,354
Nova Scotia.....	21,425
Prince Edward Island...	2,184
Northwest Territories...	1,304,903
Yukon Territory.....	207,076

## Population: Provinces and Territories (Estimated Jan 1, 1965)

<b>Canada.....</b>	<b>19,440,000</b>
Ontario.....	6,668,000
Quebec.....	5,624,000
British Columbia.....	1,771,000
Alberta.....	1,446,000
Manitoba.....	960,000
Saskatchewan.....	946,000
Nova Scotia.....	761,000
New Brunswick.....	621,000
Newfoundland.....	494,000
Prince Edward Island...	108,000
Northwest Territories...	25,000
Yukon Territory.....	16,000

## Distances between Capitals

(A) Air (H) Highway (R) Railway (W) Water

	miles
St. John's to Halifax....	(W) 531
Charlottetown to Halifax	(H) 165
Halifax to Quebec.....	(H) 759
Quebec to Toronto.....	(H) 515
Toronto to Winnipeg....	(A) 957

	miles
Winnipeg to Regina.....	(A) 356
Regina to Edmonton....	(R) 512
Edmonton to Victoria...	(R&W) 846
Whitehorse to Edmonton	(H) 1,287



*On the vast open prairie, a flaming sky silhouettes a lone homestead and presages the morrow's weather.*

### Canada's Climate

## Five Regions Provide Variety

Canada's climates are similar to those in Europe and Asia extending from polar regions to mid-northern hemispheric latitudes. However, the physical geography of North America contributes greatly to climatic variety.

On the west coast, the western Cordillera limits mild air from the Pacific to a narrow band along the West coast. The prairies, being shielded from the Pacific Ocean, and being situated in the interior of a large land mass, are dry and subject to extreme temperatures. As they are also open to rapid air flow from either north or south, they often experience dramatic weather changes. On the other hand, the large water surfaces of Eastern Canada produce a considerable modification of the climate.

The five general climatic regions of Canada are the following: Arctic, Northern, Pacific, Cordillera and Prairie.

The **Arctic** climate includes the Arctic islands and that part of the Arctic coast north of the tree line. Along the coastal areas of the islands, temperatures vary from 65°F. in summer to -65° in winter. Snowfall is relatively light.

The **Northern** climatic area extends in a broad band from the Yukon Territory to Labrador and from the tree line south to more settled areas of southern Canada. Average temperatures range from 50°-60°F. in summer to -10°F. in winter. Rainfall and snowfall are abundant in the eastern portion but deficient in the northwestern section.

The **Pacific** climatic region embraces the islands and a narrow coastal belt of British Columbia. Temperatures rarely drop below zero in winter or rise above 90° in summer. This is the area of heaviest rainfall in Canada.

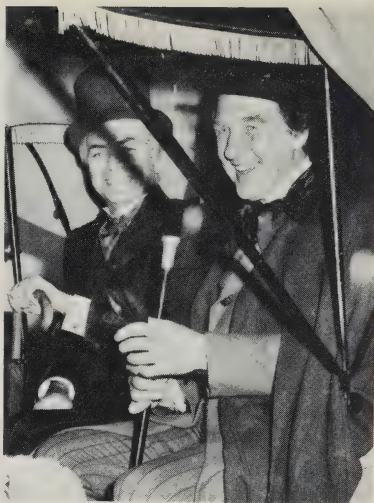
The **Cordillera** is the most complex climatic region of Canada. It extends in a north-west-south belt through British Columbia and the Yukon Territory. Precipitation decreases eastward from the coast while temperature ranges decrease westward from the interior of the continent. As a rule, altitude here is more a climatic determinant than is latitude.

The **Prairie** climatic region includes most of the settled farmlands of Manitoba, Saskatchewan and Alberta. Precipitation averages from 12 to 20 inches. Though temperatures have ranged from -60°F. to 115°F., averages are from 5°F. to 65°F. The Prairie region is well known for its cold, windy blizzards and for its contrasting chinooks which bring temperature increases from 40°F. to 50°F. within a few hours, usually to Alberta.

### Temperature and Precipitation Data for Certain Localities in Canada (Long-term average)

Station	Temperature (deg. Fahrenheit)					Precipitation Av. Annual (inches)	Bright Sunshine (hrs. per annum)	Freezing Temper- ature (days)
	Av. Annual	Av. Jan- uary	Av. July	Extreme High Recorded	Extreme Low Recorded			
Gander, Nfld.....	38.9	18.6	61.6	96	-15	39.50	1,413	190
St. John's, Nfld....	41.0	24.0	60.0	93	-21	53.09	1,464	179
Charlottetown, P.E.I.....	42.5	18.8	66.6	98	-27	43.13	1,857	154
Halifax, N.S.....	44.6	24.4	65.0	99	-21	54.26	1,876	134
Sydney, N.S.....	42.8	22.7	65.0	98	-25	50.61	1,745	162
Saint John, N.B....	42.0	19.8	61.8	93	-22	47.39	1,902	148
Sept Iles, Que.....	33.0	3.2	59.2	90	-46	41.94	..	210
Montreal, Que.....	43.7	15.4	70.4	97	-29	41.80	1,811	143
Port Arthur-Fort William, Ont....	36.8	7.6	63.4	104	-42	31.62	1,797	208
Toronto, Ont.....	47.0	24.5	70.8	105	-26	30.93	2,047	123
Churchill, Man....	18.7	-17.3	54.7	96	-57	15.01	1,646	255
Winnipeg, Man....	36.6	0.6	68.4	108	-54	19.72	2,126	194
Regina, Sask.....	36.1	2.3	66.6	110	-56	15.09	2,264	214
Edmonton, Alta....	36.8	7.7	62.9	99	-57	17.63	2,173	196
Fort Nelson, B.C..	30.2	-7.3	61.7	98	-61	16.37	..	216
Victoria, B.C.....	50.2	39.2	60.0	95	-2	26.19	2,093	20
Whitehorse, Y.T....	31.1	5.2	56.2	91	-62	10.67	..	219
Aklavik, N.W.T....	15.8	-18.2	56.4	93	-62	9.77	..	261
Fort Reliance, N.W.T.....	15.8	-15.8	45.7	76	-49	13.53	..	273

*A project of the Centennial Commission was the re-enactment in August and September, 1964, of the 1864 Confederation Conference, Charlottetown. Professional actors portrayed delegates. Sir John A. Macdonald (Robert Christie) and Sir Georges-Etienne Cartier (Bertrand Gagnon) take a calèche to their ship.*



*The CCGS Ernest Lapointe was camouflaged to resemble the Queen Victoria which carried Confederation delegates from Quebec City to the Atlantic Provinces. Crew members were attired as sailors of a century ago.*



*Canadian TV star, Larry Mann, who played the part of Sir S. Leonard Tilley, New Brunswick Father of Confederation, is shown in Saint John, N.B., with a gift of dulce.*

## Exploration and Settlement; the Road to Confederation

Long before Europeans discovered the vast American land mass, Indians and Eskimos had already settled on the continent.

Centuries later came the Norse to explore the Eastern coastlands; Columbus, to make his famous landfall in the West Indies in 1492; John Cabot, five years later, to claim the northern lands for the English crown, and Jacques Cartier, in 1534, to plant the flag of France on a Gaspé promontory.

In the late sixteenth and early seventeenth centuries, other mariners, seeking a western sea route to Asia, explored the sealanes of the Canadian Arctic, while still other adventurers turned to inland exploration. Exploitation of the fisheries and fur trade led to intense rivalry between English and French, often culminating in open conflict.

### *Climax in 1763*

The climax of the struggle was reached in 1763 with the signing of the Treaty of Paris by which Canada (with the exception of the islands of St. Pierre and Miquelon) became British territory. The Quebec Act of 1774 established French civil law in Lower Canada.

The revolutionary War of 1775-1783 which established the freedom of the thirteen colonies to the south brought an influx of settlers to Canada. Some 40,000 United Empire Loyalists, encouraged by offers of free lands, moved northwards. They were followed down the years by thousands of other immigrants.

The Constitutional Act of 1791 gave a measure of self-government to the central area, and established two provinces, Upper and Lower Canada. In 1840 these colonies were re-united.

The war of 1812 between the United States and Britain saw battles fought on Canadian soil but no land ownership changes. Political unrest followed as colonists sought to establish responsible government. This was achieved first by Nova Scotia in 1848; by other provinces soon afterwards.

### *Confederation Conferences*

In 1864 the governments of the three Maritime provinces called a conference at Charlottetown, P.E.I., to discuss a Maritime union. Representatives from Canada, also attending, suggested a union of all the British North American colonies. Further plans for this larger union were made at Quebec later in the year.

Centennial observances of the Charlottetown meeting were held in 1964. They included a re-enactment of the arrival of the *Queen Victoria* with the Fathers of Confederation, a meeting of provincial leaders in the historic Confederation Chamber of the Provincial Building, historic pageants, air shows, carnivals and parades. In addition, the Fathers of Confederation Memorial Building, Canada's tribute to its founders, was opened with appropriate ceremony by Her Majesty Queen Elizabeth II.

The result of the various conferences in the sixties of the last century was the British North America Act of 1867 which united three provinces—Canada, Nova Scotia and New Brunswick. Other provinces joined later: Manitoba, in 1870; British Columbia, 1871; Prince Edward Island, 1873; Saskatchewan and Alberta, 1905; Newfoundland, 1949.

### *An Independent Nation*

Canada's development into a fully independent nation followed. At an Imperial Conference in 1926, an important statement was drafted. It declared that Great Britain and the Dominions were "autonomous Communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations". Canada's position was further clarified in 1931 by the passage of the Statute of Westminster which removed most of the legal inequalities which still persisted.

Since Confederation was achieved almost a century ago, Canada has changed from a country largely dependent on primary products to a foremost industrial nation. Its population has expanded from 3,689,257 in 1871 to an estimated 19,440,000 in 1965. Phenomenal changes have taken place in the economy. New sources of minerals have been discovered, hydro-electric power resources extended; industrial development expanded.

At the same time, Canada has maintained a continuing interest in world affairs. It was one of the charter members of the United Nations and has played an active role in the various councils and agencies of that world organization.

### *A Century of Growth*

The first century under Confederation has proved to be a period of remarkable growth in the story of Canada. As the nation prepares to celebrate its centennial, plans are multiplying for appropriate ceremonies, and the establishment of lasting memorials, to commemorate the historic anniversary of 1867.

Newfoundland plans a cultural centre with theatre, museum and archives while Nova Scotia is considering a new centre for medical studies and research, a mining museum at Glace Bay and an arena at Port Hawkesbury. New Brunswick is restoring an historic building to house the Province's archives. Prince Edward Island, which saw the establishment in Charlottetown of the magnificent Fathers of Confederation Memorial Building to house the archives, library, art gallery and the great Confederation Theatre, in honour of the 1864 meeting of the Fathers of Confederation in the capital, is considering some 25 other projects to mark the 1867 anniversary.

Quebec is to have some 50 new cultural centres each of which will be a combination of gymnasium, community hall, theatre, library or museum, a new conservatory that will serve as Centre for the Performing Arts and Music School combined, and two large centennial parks. It will also play host to the 1967 Universal and International Exhibition.



*Twenty-three delegates, two secretaries and the clerk of the Executive Council, Canada, are shown above on the steps of Government House, Charlottetown, 1864. Below are the actors portraying the Fathers of Confederation during the 1964 Centennial Celebrations. They include: John A. Macdonald (Robert Christie); Alexander Galt (Austin Willis); George Brown (Andrew Allan); Georges-Etienne Cartier (Bertrand Gagnon); Thomas D'Arcy McGee (James Barron); Alexander Campbell (Alan Pearce); William McDougall (John Mackin); Hector Langevin (Jean Cavall); W. H. Pope (Joseph Austin); J. H. Gray (John Vernon); Charles Tupper (Peter Donat); S. Leonard Tilley (Larry Mann); A. G. Archibald (Dr. J. Coyle); George Coles (Herbert Baxter); R. B. Dickey (Christopher Gledhill); J. H. Gray (Wilfred Inman); W. A. Henry (Ivan Dowling); J. M. Johnson (Barry Budgen); A. A. Macdonald (M. Place); J. McCully (Ian MacDonald); Edward Palmer (Judge Palmer); W. H. Steeves (Crilly Bourke); Edward Whalen (Gordon Bennet).*



*Hundreds of projects are being constructed to commemorate the Confederation of 1867. Central attraction of the 17-acre Canadian Centennial Numismatic Park, Sudbury, Ontario, is the majestic "Big Nickel", a 30-foot replica of the Canadian 1951 Commemorative five-cent piece.*



*Below is Dundurn Castle under restoration by the city of Hamilton.*



Among the Ontario projects are a new Museum of Science and Technology, a restored Dundurn Castle, Hamilton, and, in Ottawa, the Canadian Centre for the Performing Arts, a new National Library and Public Archives, and a National Museum, comprising two Branches—Natural History and Human History.

Manitoba plans a new cultural centre in Winnipeg, an auditorium in Brandon, a new pavilion at the International Peace Garden, and Provincial Parks in the Spruce Woods area, Shellmouth, and at Birds Hill. During the summer the province will be engrossed in the Pan-American games—a feature of the Festival of the Americas.

Saskatchewan, which is celebrating in 1965 its sixtieth anniversary as a province of Canada, plans a new centre for the Performing Arts in Regina; a similar centre and an enlarged Museum of Western Development, in Saskatoon. In Alberta, Edmonton is to have a new Provincial Museum and Archives Building; Calgary, a planetarium. Included in British Columbia plans is a new Provincial Museum and Archives Building in Victoria. The Yukon and Northwest Territories, too, are enthusiastically planning new structures and celebrations.

In addition, many other permanent memorials are being established in communities throughout the length and breadth of Canada. Hundreds of local festivals will also reflect the pride of Canadians in a land which extends from sea to sea. For Confederation Day, 1967, the whole country expects to be "en fête".



*Maligne Lake, Alberta.*

### Canada's Population

## Census Returns Provide Interesting Data

The first post-Confederation census of Canada was taken in 1871. Subsequent census returns have been made every ten years. While the immediate purpose is to enable Parliament to pass a Redistribution Act to revise the federal electoral divisions, the returns also provide Canadians with interesting data concerning the population of Canada.

On June 1, 1961, the tenth decennial Census of Canada was carried out and 18,238,247 people were counted. Of these, 9,218,893 were males and 9,019,354, females.

The estimated population of Canada on January 1, 1965, was 19,440,000—an increase of approximately 1,202,000 or 6.6 p.c. since the June 1, 1961 Census. The rate of population growth in Canada since the last census, at 1.8 per annum, has been slower than it was during each of the previous years of the last decade. This is due to a decline in the birth rate since 1961 (to an estimated 23.8 per thousand of the population in 1964, compared with an average of 28 per thousand in the first half of the 1951-61 period); and a falling off in immigration.

During the 1950's immigration to Canada averaged 154,000 annually. In the last three years it has averaged approximately 93,000 per annum. Losses in population due to deaths and emigration since 1961 have not changed materially from the period immediately preceding the last census.

### Varied Growth Rates

Sharp differences in the growth rate by provinces since the 1961 Census are revealed by population estimates of 1964. The fastest-growing provinces have been Alberta and Newfoundland, whose populations have risen just over 7 p.c. since 1961.

In contrast, the rate of population growth has been slowest in Prince Edward Island and Saskatchewan, at 1.9 p.c. These two provinces recorded losses of population between 1961 and 1964 due to net migration. Despite some net out-movement of population, Newfoundland recorded a 7 p.c. growth in population since 1961 as this province had the highest rate of natural increase.

Net migration loss over this period was highest in Saskatchewan at an estimated 31,000. Manitoba also recorded a net loss due to migration. Since 1961 British Columbia has experienced the largest estimated net gain in population due to migration at close to 41,000 followed by Ontario at approximately 39,000. Quebec and Alberta also showed gains.

According to the intercensal population estimates, 1,977,000 (10 p.c.) of Canada's population in June 1964, resided in the Atlantic Provinces; 5,562,000 (29 p.c.) in Quebec; 6,586,000 (34 p.c.) in Ontario; 3,333,000 (17 p.c.) in the Prairie Provinces; and 1,738,000 (9 p.c.) in British Columbia. Estimated population in the Yukon and Northwest Territories amounted to 41,000.

Elements in Population Growth, Canada and Provinces, 1961-64

Province or Territory	Population 1961	Births	Deaths	Immigration	Actual Increase		Net Migration	Estimated Population June 1, 1964
					No.	p.c.		
	'000	No.	No.	No.	'000		No.	'000
<b>Canada....</b>	<b>18,238</b>	<b>1,406,015</b>	<b>435,072</b>	<b>251,410</b>	<b>997</b>	<b>5.5</b>	<b>26,000</b>	<b>19,235</b>
Nfld.....	458	46,346	9,505	1,107	33	7.2	- 3,800	491
P.E.I.....	105	8,433	3,045	215	2	1.9	- 3,400	107
N.S.....	737	57,499	18,718	3,132	23	3.1	-15,800	760
N.B.....	598	48,486	14,383	2,506	19	3.2	-15,100	617
Que.....	5,259	403,443	113,651	61,923	303	5.8	13,200	5,562
Ont.....	6,236	467,808	156,779	130,376	350	5.6	39,000	6,586
Man.....	922	68,447	22,876	7,913	36	3.9	- 9,600	958
Sask.....	925	70,784	21,596	4,063	18	1.9	-31,200	943
Alta.....	1,332	116,117	27,965	14,384	100	7.5	11,800	1,432
B.C.....	1,629	113,640	45,427	25,507	109	6.7	40,800	1,738
Y.T. and N.W.T.	37	5,012	1,127	284	4	10.8	100	41

### Expanding Urban Population

At the turn of the century, almost two-thirds of the people of Canada lived in rural areas, and only one-third in urban. By 1961 this situation had reversed itself: 12,700,390 people—70 p.c. of the total population—now live in urban areas, or communities of more than 1,000 population. Close to two-thirds of the urban population are in major urban centres of 100,000 population and over. About three-fifths of the rural population live in small villages and settlements and two-fifths on farms.

## Rural and Urban Population, Canada and Provinces, 1961

Province or Territory	Total Population	Rural		Urban			
		Farm	Non-farm	Total	100,000 and over	30,000 to 99,999	1,000 to 29,999
<b>Canada</b> .....	<b>18,238,247</b>	<b>2,072,785</b>	<b>3,465,072</b>	<b>12,700,390</b>	<b>7,923,997</b>	<b>1,704,787</b>	<b>3,071,606</b>
Nfld.....	457,853	9,077	216,756	232,020	—	85,192	146,828
P.E.I.....	104,629	34,514	36,206	33,909	—	—	33,909
N.S.....	737,007	56,832	279,663	400,512	276,284	—	124,228
N.B.....	597,936	62,265	257,658	278,013	—	135,911	142,102
Que.....	5,259,211	564,826	787,981	3,906,404	2,637,872	384,628	883,904
Ont.....	6,236,092	505,699	906,864	4,823,529	2,958,955	934,870	929,704
Man.....	921,686	171,472	161,407	588,807	465,712	—	123,095
Sask.....	925,181	304,672	222,418	398,091	112,141	128,732	157,218
Alta.....	1,331,944	285,823	202,910	843,211	605,342	35,454	202,415
B.C.....	1,629,082	77,540	369,617	1,181,925	867,691	—	314,234
Yukon.....	14,628	47	9,550	5,031	—	—	5,031
N.W.T.....	22,998	18	14,042	8,938	—	—	8,938

For the 1961 Census, 17 census metropolitan areas were delineated. The population residing in these areas totalled 8,163,986 (45 p.c.) of the total population of Canada at that date. As evidence of the rapid expansion in metropolitan area population since World War II, these 17 areas recorded a 2,527,000 (45 p.c.) increase in the ten-year period between the 1951 and 1961 Censuses.

Since the 1961 Census, the Dominion Bureau of Statistics has published annual population estimates for the larger metropolitan areas of Canada. These estimates are projected at June 1 each year.

### Estimated Population of Major<sup>1</sup> Metropolitan Areas June 1, 1964, 1963, and 1962 Compared with 1961 Census

Metropolitan Area <sup>2</sup>	Estimated Population			Population Census June 1, 1961
	June 1, 1964	June 1, 1963	June 1, 1962	
Calgary.....	310,000	300,000	290,000	279,062
Edmonton.....	372,000	362,000	349,000	337,568
Hamilton.....	418,000	408,000	399,000	395,189
London.....	192,000	188,000	185,000	181,283
Montreal.....	2,260,000	2,205,000	2,156,000	2,109,509
Ottawa.....	468,000	458,000	446,000	429,750
Quebec.....	384,000	376,000	366,000	357,568
Toronto.....	1,989,000	1,925,000	1,869,000	1,824,481
Vancouver.....	828,000	809,000	798,000	790,165
Windsor.....	200,000	196,000	194,000	193,365
Winnipeg.....	487,000	485,000	483,000	475,989

<sup>1</sup> With 100,000 population or over in the city proper at the 1961 Census. In addition, Regina city with over 100,000 population in 1961, had an estimated population of 115,000 in June 1962 and 118,000 in 1963.

<sup>2</sup> Areas as of 1961 Census.

### *Millions under Fifteen*

A significant fact revealed by the 1961 Census was the striking increase in the population of children under 15 years of age—an increase of 46 p.c. since 1951. The number of children between 10 and 14 years of age in 1961, who are now of high school age, increased at the remarkable rate of 64 p.c. Those between 15 and 19 years increased more rapidly than the total population, indicating a steady rise in new entries to the labour market in the years

following the 1961 Census. Over two fifths of Canada's population in 1961 were under 20 years of age.

In contrast, those in the age groups 20-24 and 25-29 were mainly persons born during the depression years of the 1930's when the birth rate was low. These groups increased by only 8.7 p.c. and 6.9 p.c. respectively—explaining, in part, the gradual decline in marriages in recent years, a trend which now seems to be arrested.

In the older age groups, those between 65 and 69 recorded a modest rate of increase between 1951 and 1961, but the age group 70 years and over increased by 38.5 p.c., reflecting the effect of heavy immigration to Canada in the first decade or two of this century.

Since the 1961 Census, the age groups 15-19 and 20-24 have been showing the fastest rates of growth. While Canada's population as a whole increased by 5.5 p.c. between June 1961, and June 1964, the 15-19 age group recorded an 18.2 p.c. increase, and the 20-24 age group a 10.7 p.c. growth.

The effects of this differential growth rate will be a rise in the number of entries to the Canadian labour force, then an acceleration in the rate of family formation, followed by an increasing volume of births towards the end of the present decade. Those persons born in the depression years of the 1930's are now between 25-34, thus accounting for the decline in this age group of close to 3 p.c. since 1961.

**Population by Age Group, Canada, 1961 and 1964**

Age Group	1961 Census	1964 Estimate	Percentage Increase	Percentage Distribution	
				1961	1964
<b>Total</b> .....	<b>18,238,247</b>	<b>19,235,000</b>	<b>5.5</b>	<b>100.0</b>	<b>100.0</b>
<b>Under 15</b> .....	<b>6,191,922</b>	<b>6,468,900</b>	<b>4.5</b>	<b>34.0</b>	<b>33.6</b>
0-4.....	2,256,401	2,283,600	1.2		
5-9.....	2,079,522	2,181,000	4.9		
10-14.....	1,855,999	2,004,300	8.0		
<b>15-64</b> .....	<b>10,655,171</b>	<b>11,298,200</b>	<b>6.0</b>	<b>58.4</b>	<b>58.7</b>
15-19.....	1,432,559	1,692,600	18.2		
20-24.....	1,183,646	1,310,700	10.7		
25-34.....	2,481,107	2,409,100	- 2.9		
35-44.....	2,389,885	2,489,400	4.2		
45-54.....	1,878,504	1,998,400	6.4		
55-64.....	1,289,470	1,398,000	8.4		
<b>65+</b> .....	<b>1,391,154</b>	<b>1,467,900</b>	<b>5.5</b>	<b>7.6</b>	<b>7.6</b>

## Vital Statistics

With a total of 465,767 births in 1963, Canada's birth rate stood at 24.6 per thousand population, the lowest since 1945. The provincial birth rates varied from a low of 22.1 in British Columbia to a high of 32.1 in Newfoundland. The total number of births has been declining since 1959 when there was a record high of 479,275 births. The birth rate has been decreasing since 1954 when it was at an all-time high of 28.5. There were 1,053 male births for every 1,000 female births.



*Approximately six and a half million Canadians are under fifteen years of age.*

Excluding Newfoundland, of the total of 450,324 babies born in 1963, 442,858, or 98.3 p.c., were delivered in hospitals. This compares with less than 40 p.c. before World War II and over 67 p.c. at the end of the war. The provincial percentages ranged from a low of 96.5 to a high of 99.8, with over 99 p.c. of the births occurring in hospitals in six of the provinces.

### *High Birth Rate*

Canada has consistently had one of the highest birth rates among the more highly developed countries of the world since World War II. Of these, only New Zealand and Israel exceeded Canada's rate in 1963. Comparable rates for certain other countries were as follows: New Zealand, 25.5; Israel, 25.0; Australia, 21.6; U.S.A., 21.6; United Kingdom, 18.4; France, 18.2; Japan, 17.3; Sweden, 14.8.

There were 131,111 marriages in Canada in 1963, the highest number since 1959. However, the marriage rate was 6.9, the lowest since 1934. Although the number of marriages has been increasing since 1961, when there were 128,475 marriages, the number of births has been decreasing since 1959. Half of the girls were married by the time they were 21 years and 2 months old. For young men the corresponding age was 23 years and 10 months. Teenagers have, by far, the highest fertility rate, with one out of every two married women bearing a child each year.

### *Low Death Rate*

On the other hand, with a total of 147,367 deaths in 1963, Canada's crude death rate was 7.8, one of the lowest in the world. Rates for certain other countries were as follows: Israel, 6.2; Japan, 7.0; Australia, 8.7; New Zealand, 8.8; U.S.A., 9.6; Sweden, 10.1; France, 11.7; United Kingdom, 12.2.



*Apartment living is becoming increasingly popular in Canada as the trend from rural to urban living increases.*

### Births, Marriages and Deaths, 1931-1963

(Newfoundland included from 1949)

Year	Births		Marriages		Deaths		Natural Increase <sup>2</sup>	
	Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>
Av. 1931-1935...	228,712	21.5	68,660	6.5	103,800	9.8	124,791	11.7
Av. 1936-1940...	229,064	20.5	96,931	8.7	109,764	9.8	119,300	10.7
Av. 1941-1945...	277,320	23.5	114,091	9.7	115,572	9.8	161,748	13.7
Av. 1946-1950...	355,748	27.4	126,898	9.8	120,438	9.3	235,310	18.1
Av. 1951-1955...	416,334	28.0	128,915	8.7	126,666	8.5	289,668	19.5
Av. 1956-1960...	469,555	27.6	132,047	7.8	136,669	8.0	332,886	19.6
1961.....	475,700	26.1	128,475	7.0	140,985	7.7	334,715	18.4
1962.....	469,693	25.3	129,381	7.0	143,699	7.7	325,994	17.6
1963.....	465,767	24.6	131,111	6.9	147,367	7.8	318,400	16.8

<sup>1</sup>Per thousand population. <sup>2</sup>Excess of births over deaths.

In the 1961 Census the marital status of the 12,046,000 people who were 15 years and over was shown separately. Of these 3,191,000 were single, 8,024,000 married, 778,000 widowed and 53,000 divorced. Thus, just over one quarter of the population 15 years and over were single, two thirds were married, over 6 p.c. were widowed, and 0.4 p.c. divorced.

Due to a somewhat older age at marriage, 30 p.c. of the males over 15 years were single compared with 23 p.c. of the females above this age. Partly for the same reason, almost 10 p.c. of the females were widowed and only 3 p.c. of the males. Additional reasons for the larger numbers of widows (579,000 widows compared with 200,000 widowers at the census date) are the heavier mortality among men and the higher rate of remarriage.

The following table shows the estimated number of males and females by age groups and marital status as of June 1, 1963, with comparative data from the 1961 Census. The table reveals an increase in the number of married males of 106,300 and of married females of 108,200 since the 1961 Census.

Corresponding increases for the single population, 15 years and over, were 100,500 for males and 99,100 for females. The number of widowers has remained approximately the same as in the 1961 Census, while widows have increased by 27,200.

**Population 15 Years and Over, by Marital Status, Sex and Age,  
Canada, 1961 and 1963**

Marital Status	Total 15 years and over			15-44		45-64		65 +	
	T	M	F	M	F	M	F	M	F
<b>1961</b>									
<b>Total...</b>	<b>12,046,325</b>	<b>6,052,802</b>	<b>5,993,523</b>	<b>3,765,546</b>	<b>3,721,651</b>	<b>1,613,139</b>	<b>1,554,835</b>	<b>674,117</b>	<b>717,037</b>
Single...	3,191,206	1,811,473	1,379,733	1,564,204	1,150,134	174,783	156,709	72,486	72,890
Married...	8,024,304	4,019,725	4,004,579	2,182,163	2,518,370	1,375,721	1,190,565	461,841	295,644
Widowed	778,223	199,507	578,716	9,712	36,858	52,518	194,955	137,277	346,903
Divorced	52,592	22,097	30,495	9,467	16,289	10,117	12,606	2,513	1,600
<b>1963</b>									
<b>Total<sup>1</sup>...</b>	<b>12,496,500</b>	<b>6,261,600</b>	<b>6,234,900</b>	<b>3,891,500</b>	<b>3,844,300</b>	<b>1,680,100</b>	<b>1,638,400</b>	<b>690,000</b>	<b>752,200</b>
Single...	3,390,800	1,912,000	1,478,800	1,663,800	1,242,800	175,300	159,900	72,900	76,100
Married...	8,238,800	4,126,300	4,112,800	2,207,100	2,553,900	1,443,600	1,263,700	475,300	295,200
Widowed	805,200	199,300	605,900	10,100	30,300	50,000	196,700	139,200	378,900

<sup>1</sup>Includes divorced.

Almost 85 p.c. of the Canadian population at the 1961 Census was born in Canada. The foreign-born, numbering 2,844,000, reported a wide variety of countries of birth. Just over 1,500,000 or more than one-half of these were post-World-War-II immigrants. Between June 1, 1961 and June 1, 1964 some 250,000 additional immigrants have come to Canada.

In the following table the distribution of these recent immigrants by country of birth is compared with the birthplaces of the total foreign-born population in Canada at the 1961 Census.

The percentage of United Kingdom-born persons among recent immigrants, at 22 p.c., is considerably lower than the 34 p.c. reporting this birthplace among the total foreign-born in Canada at the 1961 Census. The percentage of recent immigrants born in Italy is double the percentage of this nativity among the foreign-born at the last census. Just over half of all immigrants continue to come from continental Europe.

**Elements in Population Growth, Canada and Provinces, 1951-61**

Province or Territory	Population 1951	Births	Deaths	Natural Increase	Immigration	Actual Increase	Net Migration	Population 1961
<b>Canada...</b>	<b>14,009,429</b>	<b>4,468,340</b>	<b>1,320,142</b>	<b>3,148,198</b>	<b>1,542,853</b>	<b>4,228,818</b>	<b>1,080,620</b>	<b>18,238,247</b>
Nfld....	361,416	141,165	30,169	110,996	4,200	96,437	- 14,559	457,853
P.E.I....	98,429	26,990	9,369	17,621	1,451	6,200	- 11,421	104,629
N.S....	642,584	187,571	59,278	128,293	19,148	94,423	- 33,870	737,007
N.B....	515,697	165,299	45,838	119,461	9,718	82,239	- 37,222	597,936
Que....	4,055,681	1,348,440	350,140	998,300	325,329	1,203,530	205,230	5,259,211
Ont....	4,597,542	1,426,211	472,718	953,493	817,292	1,638,550	685,057	6,236,092
Man....	776,541	220,016	70,326	149,690	66,344	145,145	- 4,545	921,686
Sask....	831,728	238,998	66,674	172,324	30,715	93,453	- 78,871	925,181
Alta....	939,501	345,025	79,830	265,195	112,520	392,443	127,248	1,331,944
B.C....	1,165,210	355,736	131,945	223,791	155,052	463,872	240,081	1,629,082
Y.T. and N.W.T.	25,100	12,889	3,855	9,034	1,084	12,526	3,492	37,626

**Birthplace of Foreign-born Population at 1961 Census with Corresponding  
Data for Immigrants to Canada, June 1, 1961 to June 1, 1964**

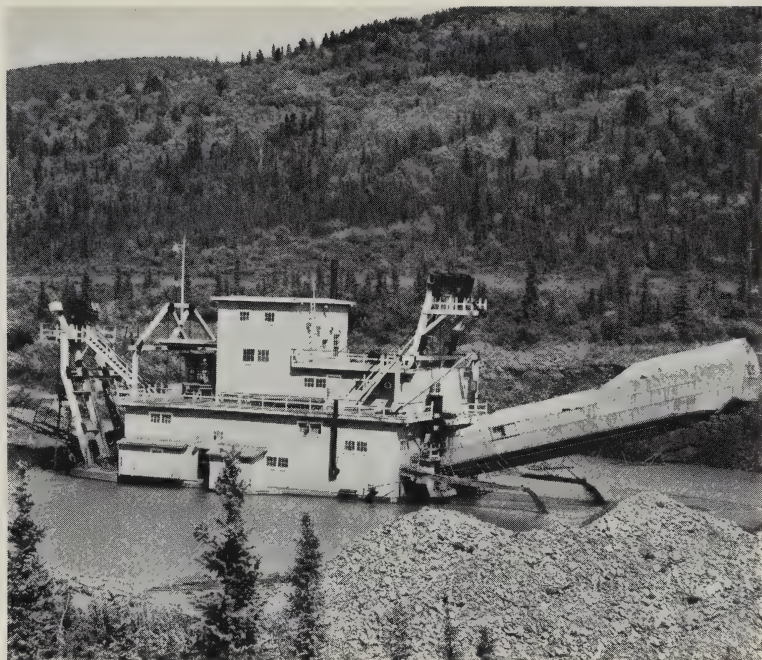
Birthplace	1961 Census		Immigrants 1961-1964 <sup>1</sup>	
	No.	P.c.	No.	P.c.
<b>Total</b> .....	<b>2,844,263</b>	<b>100.0</b>	<b>249,129</b>	<b>100.0</b>
<b>United Kingdom</b> .....	<b>969,715</b>	<b>34.1</b>	<b>55,424</b>	<b>22.2</b>
<b>Other Commonwealth Countries</b> .....	<b>47,887</b>	<b>1.7</b>	<b>17,917</b>	<b>7.2</b>
<b>United States</b> .....	<b>283,908</b>	<b>10.0</b>	<b>26,842</b>	<b>10.8</b>
<b>European Countries</b> .....	<b>1,468,058</b>	<b>51.6</b>	<b>130,861</b>	<b>52.5</b>
Austria .....	70,192	2.5	1,864	0.7
Belgium .....	28,253	1.0	1,991	0.8
Czechoslovakia .....	35,743	1.2	704	0.3
Denmark .....	30,869	1.1	1,873	0.7
Finland .....	29,467	1.0	971	0.4
France .....	36,103	1.3	6,813	2.7
Germany .....	189,131	6.6	15,085	6.1
Greece .....	38,017	1.3	12,953	5.2
Hungary .....	72,900	2.6	2,415	1.0
Italy .....	258,071	9.1	45,667	18.3
Netherlands .....	135,033	4.7	5,298	2.1
Poland .....	171,467	6.0	6,390	2.6
Republic of Ireland .....	30,889	1.1	2,255	0.9
U.S.S.R. ....	186,653	6.6	1,625	0.7
Yugoslavia .....	50,826	1.8	6,521	2.6
Others .....	104,444	3.7	18,436	7.4
<b>Asiatic Countries</b> .....	<b>57,761</b>	<b>2.0</b>	<b>6,629</b>	<b>2.7</b>
China .....	36,724	1.3	2,084	0.8
Japan .....	6,797	0.2	454	0.2
Other .....	14,240	0.5	4,091	1.7
<b>Other Countries</b> .....	<b>16,934</b>	<b>0.6</b>	<b>11,456</b>	<b>4.6</b>

<sup>1</sup> Figures for the period January 1 to June 1, 1964 are partly estimated. Excludes a few Canadian-born immigrants.

The principal religious denominations of Canada are shown in the following table. The Roman Catholic population at 8,343,000 accounted for approximately 45 p.c. of the total, with United Church at 3,664,000 for 20 p.c., and Anglicans at 2,409,000 for 13 p.c.

**Population by Religious Denomination, 1951 and 1961**

Denomination	Population		Percentage Distribution		Percentage Increase
	1951	1961	1951	1961	1951-61
Anglican Church of Canada ..	2,060,720	2,409,068	14.7	13.2	16.9
Baptist .....	519,585	593,553	3.7	3.3	14.2
Greek Orthodox .....	172,271	239,766	1.2	1.3	39.2
Jewish .....	204,836	254,368	1.5	1.4	24.2
Lutheran .....	444,923	662,744	3.2	3.6	49.0
Mennonite .....	125,938	152,452	0.9	0.8	21.1
Pentecostal .....	95,131	143,877	0.7	0.8	51.2
Presbyterian .....	781,747	818,558	5.6	4.5	4.7
Roman Catholic .....	6,069,496	8,342,826	43.3	45.7	37.5
Ukrainian (Greek) Catholic ..	191,051	189,653	1.4	1.0	- 0.7
United Church of Canada .....	2,867,271	3,664,008	20.5	20.1	27.8
Other .....	476,460	767,374	3.4	4.2	61.1
<b>Total</b> .....	<b>14,009,429</b>	<b>18,238,247</b>	<b>100.0</b>	<b>100.0</b>	<b>30.2</b>



*While some still "pan" for gold in the Yukon, others prefer more modern equipment such as this floating dredge at work near Dawson.*

In the 1961 Census about 80 p.c. of the population reported ability to speak English, and 31 p.c. French. Only 12 p.c., or 2,231,000 were able to speak English and French. In all provinces, except Quebec, English was spoken by a high percentage of the population. In the latter province the percentage speaking English was 37. French was spoken by 87 p.c. of the population of the Province of Quebec and by 38 p.c. of the population of New Brunswick. In all other provinces the percentage speaking French was less than 10.

No ethnic groups reported as much as one-third of its number speaking English and French. The population of French origin recorded the highest proportion of bilingual persons at 30 p.c., the Jewish next at 18 p.c., followed by the Italian group with 11 p.c. Only 4 p.c. of the British Isles' group spoke both English and French.

These differences appear to be related in part to the geographical distribution of the basic English and French ethnic groups in Canada. Since over three-quarters of the population of French origin were resident in the Province of Quebec, ability to speak French among ethnic groups in other provinces of Canada was quite low. In the Province of Quebec itself, however, one-third of the British Isles' group, 36 p.c. of the German, 62 p.c. of the Italian, 37 p.c. of the Jewish, one-third of the Netherlands' group and between 30 and 40 p.c. of several smaller ethnic groups reported ability to speak French.

## Population by Mother Tongue, 1951 and 1961

Mother Tongue	1951	1961	Percentage increase 1951-1961
<b>Canada</b> .....	<b>14,009,429</b>	<b>18,238,247</b>	<b>30.2</b>
English.....	8,280,809	10,660,534	28.7
French.....	4,068,850	5,123,151	25.9
Chinese.....	28,289	49,099	73.6
Finnish.....	31,771	44,785	41.0
German.....	329,302	563,713	71.2
Indian and Eskimo.....	144,787	166,531	15.0
Italian.....	92,244	339,626	268.2
Japanese.....	17,589	17,856	1.5
Magyar.....	42,402	85,939	102.7
Netherlands.....	87,935	170,177	93.5
Polish.....	129,238	161,720	25.1
Russian.....	39,223	42,903	9.4
Scandinavian.....	106,848	116,714	9.2
Slovak.....	45,516	42,546	- 6.5
Ukrainian.....	352,323	361,496	2.6
Yiddish.....	103,593	82,448	-20.4
Other.....	108,710	209,009	92.3

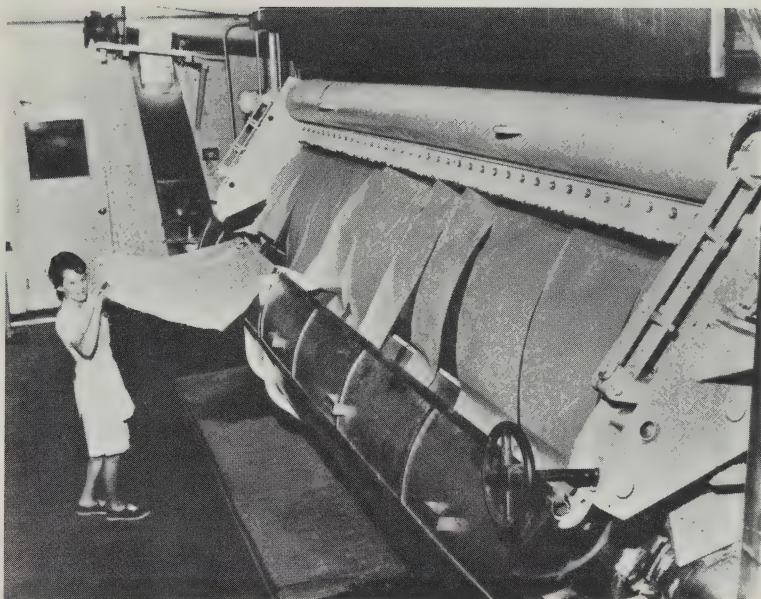
The estimated number of families in Canada on June 1, 1963 (excluding Yukon and Northwest Territories) was 4,314,000, an increase of 174,000 or 4.2 p.c. since the 1961 Census.

The average size of family in 1963 was 4.0 persons compared with 3.9 in 1961. The average family size in 1963 was largest in the Atlantic Provinces and Quebec at 4.3 persons and smallest in British Columbia at 3.6 persons.

About one-quarter of all families in the Atlantic Provinces and Quebec, compared with 31 p.c. of the families in British Columbia, had no children at home. In contrast, in the former provinces just over 15 p.c. of the families had 5 or more children at home compared with only 6 p.c. in British Columbia homes. Ontario's percentage of families with 5 or more children at home was similar to that of British Columbia, while the Prairie Provinces had 7 p.c. in this group.



*The Dominion Bureau of Statistics maintains a variety of records important to the business world. This is the computer centre of the tabulating services division. The Bureau became a Federal Department in 1965.*



*"Sheets" of potato roll off the drum dryer at a processing plant in Alliston, Ontario. They are chopped into small flakes and packaged.*

**Estimated Number and Average Size of Family in Canada and Regions, 1963, with Comparative Data from the 1961 Census**

Region		Total Families	Average Size of Family	Families by Number of Children					
				0	1	2	3	4	5 +
Canada <sup>1</sup>	1961...	4,140,384	3.9	1,215,467	837,263	853,633	555,802	310,981	367,238
	1963...	4,314,000	4.0	1,177,000	796,000	923,000	643,000	362,000	413,000
Atlantic Provinces	1961...	397,783	4.2	105,712	75,956	71,185	52,543	34,701	57,686
	1963...	410,000	4.3	99,000	72,000	78,000	59,000	38,000	64,000
Quebec	1961...	1,103,822	4.2	288,123	217,133	208,688	146,541	93,232	150,105
	1963...	1,157,000	4.3	278,000	200,000	222,000	164,000	113,000	180,000
Ontario	1961...	1,511,478	3.6	475,531	322,149	329,682	198,722	98,997	86,397
	1963...	1,580,000	3.7	457,000	310,000	368,000	242,000	110,000	93,000
Prairie Provinces	1961...	733,278	3.8	215,646	143,745	157,178	104,781	57,903	54,025
	1963...	750,000	3.9	212,000	137,000	162,000	117,000	71,000	51,000
British Columbia	1961...	394,023	3.6	130,455	78,280	86,900	53,215	26,148	19,025
	1963...	417,000	3.6	131,000	77,000	93,000	61,000	30,000	25,000

<sup>1</sup> Not including Yukon and Northwest Territories.

## Immigration

On June 1, 1961, there were 2,844,263 Canadian residents who had been born outside Canada. Between that date and January 1, 1965, an additional 323,664 immigrants entered Canada.

In 1964, 112,606 newcomers were admitted, a 21 p.c. increase over the previous year's figures. The largest group came from Britain, the second largest from Italy, and the third from the United States. The majority settled in the provinces of Ontario, Quebec and British Columbia.

In 1962, new Canadian immigration regulations were enacted stressing education, training and skills as the main conditions of admissibility, regardless of country of origin. Any person can now qualify for admission to Canada entirely on his own merit.

In the past three years there has been an appreciable increase in immigration from countries which in the past have had relatively few of their citizens apply for admittance to Canada. Approximately half of the immigrants in 1964 were sponsored.

Un-sponsored immigrants selected abroad on the basis of their occupations were assisted in finding employment on arrival by immigration officers specially trained for this work. There was a noticeable increase in the numbers of professionally- and technically-trained immigrants in 1964, as highly-qualified individuals continued in demand.

To assist those who, because of financial circumstances, might not be able to come to Canada, the government introduced an Assisted Passage Loan plan in 1951. Until the end of 1964, 156,674 persons had received such assistance. Of the total amount of \$26,073,536 advanced over those years, \$22,499,224 has been repaid.

*Between 1950 and 1964 inclusive, immigrants to Canada established approximately thirteen thousand business enterprises. In 1964 alone, 1,411. This newcomer found his "pipe dream" a profitable venture.*





*Beautiful Teslin Lake lies near the Alaska Highway, Yukon. The lure of the North is still strong. Between 1946 and 1964 inclusive, 1,665 immigrants on arrival in Canada declared their destination to be Yukon or the Northwest Territories.*

Canadian immigration offices are maintained in 21 countries: Austria, Belgium, Britain, Denmark, Egypt, Finland, France, Germany, Greece, Hong Kong, India, Ireland, Israel, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United States. In other countries the Department of External Affairs, through its missions abroad, (or through British diplomatic or consular offices), takes care of Canadian immigration interests.

### Foreign Born by Country of Birth and Period of Immigration, 1961 Census

Country of Birth	Before 1946	1946-1950	1951-1961	Total
Britain .....	605,297	103,692	260,726	969,715
Other Commonwealth countries. .	11,273	5,155	31,459	47,887
United States.....	213,879	13,644	56,385	283,908
European countries.....	480,728	175,665	811,665	1,468,058
Asiatic countries.....	23,133	4,584	30,044	57,761
Other countries.....	2,837	1,244	12,853	16,934
<b>Total.....</b>	<b>1,337,147</b>	<b>303,984</b>	<b>1,203,132</b>	<b>2,844,263</b>



*The culture of many countries is depicted Dominion Day on Parliament Hill, Ottawa, as ethnic groups delight audiences with the traditional dances and songs of their homelands.*

The Canadian Citizenship Act, which came into effect on January 1, 1947, provided for the first time the legal definition of a Canadian citizen—a person who was born in Canada or who was naturalized in Canada. The Act also provided that a child born outside of Canada to Canadian parents became a Canadian citizen upon the registration of his birth with the Registrar of Canadian Citizenship. All other British subjects who, on January 1, 1947, were married to Canadian citizens, or who had Canadian domicile, or who had resided in Canada for a period of twenty years acquired Canadian citizenship status by operation of law.

### *The Path to Citizenship*

An adult alien who wishes to become a Canadian citizen must file an application with a Citizenship Court and, after the application has been "posted" for three months, must satisfy the Court that he has been legally admitted to Canada for permanent residence and has maintained his place of domicile in Canada for at least five years, the last year of which must have been in Canada. In addition, the Court must be satisfied that the applicant is of good character, has an adequate knowledge of either English or French or, alternatively, has lived in Canada for at least 20 years, has an appreciation of the responsibilities and privileges of citizenship, intends to comply with the Oath of Allegiance, and to establish permanent residence in Canada.

On the recommendation of the Citizenship Court and with the concurrence of the Minister of Citizenship and Immigration, a certificate is prepared and forwarded to the Court. The applicant is advised of the date he is to appear in Court to renounce his previous citizenship or nationality. After taking the Oath of Allegiance, he becomes a Canadian citizen.

A married woman must apply for Canadian citizenship on her own behalf. As children are not automatically granted citizenship with their parents, an application on their behalf must be filed by their parents with the Registrar of Canadian Citizenship. A Canadian citizen may apply for a certificate, or a miniature certificate, as proof of his citizenship. In 1964, Canadian citizenship certificates were granted to 64,334 new Canadians (aliens and British). Of this number, more than half went to persons formerly citizens of other Commonwealth countries, Italy, Germany and the Netherlands.

### *Three Areas of Responsibility*

Separate and distinct from the Citizenship Registration Branch is the Citizenship Branch which has three main areas of responsibility: to facilitate the rapid integration of immigrants into Canadian life, to encourage and promote the satisfactory adjustment of Indians to life in urban communities and, finally, to encourage, on the part of all Canadians, the acceptance of citizenship responsibilities and the strengthening of Canadian unity.

To achieve these objectives, the Branch encourages and assists voluntary, church, youth and other groups to establish and conduct programs and projects designed to promote mutual understanding and co-operation among all groups in Canada. It provides technical assistance and advice in citizenship program-planning, makes available on request a variety of program aids, including pamphlets and discussion guides, and publishes a periodical, *Citizen*, which is distributed on request to officers of voluntary groups directly responsible for program-planning. All publications and materials of the Branch are available in both English and French.

The Branch administers federal-provincial grants in support of language and citizenship classes for newcomers and works closely with the provincial education authorities in the training of teachers in the techniques of teaching second languages to adults.

*Nearly two million Canadians are of Scottish origin.*





*The rich agricultural lands of Canada have attracted thousands of immigrants. Between 1950 and 1964 reports were received by the Department of Citizenship and Immigration of the purchase by newcomers of 8,427 farms valued at \$123,136,132. Down payments were \$46,757,590. The majority of purchases—5,450—were made by Netherlanders.*

**Indians**—Organized into 558 bands which vary in size from fewer than 10 members to more than 7,000, Canada's 205,000 Indians live on, or have access to, 2,265 reserves and settlements which occupy almost 6,000,000 acres. With the activities of nearly 75 p.c. of the Indian population focused on reserves, economic development programs have been introduced to exploit the various resources and economic potential available.

The Indians' largest single cash crop still is fur, and the federal and provincial governments co-operate in extensive fur management programs. Commercial fishing, which is relatively new to most inland Indians, is becoming a major source of income in the northern areas. Agricultural assistance and guidance, where feasible, are provided on reserves by the Indian Affairs Branch of the Department of Citizenship and Immigration. Wherever reserves are near the larger centres of population, Indians find work in factories, businesses and offices.

### *Placement Program*

The Indian Affairs Branch operates a job-placement program for Indians in co-operation with the National Employment Service, maintaining 11 placement specialists in various centres across Canada. These specialists provide job counselling for young Indian candidates, ensure that they have suitable living accommodation, and maintain liaison through social groups. Many young people, after leaving school, are given on-the-job training or are taught in technical institutions. Programs for older Indians on reserves include up-grading courses, and the teaching of various occupational skills.

Canada's Indians are becoming more conscious of the importance of education to their future. In 1964, the Indian school population rose to 55,475, an increase of 4,926 over the previous year and double that of a decade earlier. Over 22,000, or more than 40 p.c. of the total Indian school population, attended non-Indian schools. Such attendance is encouraged by the Indian Affairs Branch which has entered into 190 "joint school" agreements with local school boards to enable Indians from nearby reserves to attend local schools.

*Typical of the growing integration of Indians and non-Indians in community life is Mrs. Gus Gottfriedsen who was named The Good Citizen of the Greater Kamloops District for 1963 and Canadian Mother of the Year (1964). Mrs. Gottfriedsen is a member of the Kamloops Band.*



### *Community Development Program Launched*

Despite recent advancement, much must be done before Indian communities share equally with others the benefits of Canadian life. To this end, the Indian Affairs Branch has launched a Community Development Program through which Indians are assisted in making their own plans for development. This is a major program that will employ Community Development specialists and assistants to work closely with Indians on reserves.

Provincial welfare, educational, and other services have been supplied to Indians through formal and informal agreements in several parts of Canada for a number of years. The first Federal-Provincial conference devoted solely to Indian Affairs was held in Ottawa, October 29 and 30, 1964. Both the Federal Government and the provinces recognized the need to consult with the Indian people and to enlist their co-operation in planning for the future. Also, because of the differing conditions and problems among provinces, it was agreed that any arrangements for the future extension of provincial services to Indians would have to be made on a province-by-province basis.



*Leonard S. Marchand, a member of the Okanagan Indian Band, is the first Indian to be appointed to the personal staff of a Federal Cabinet Minister. Mr. Marchand is a graduate in Agriculture (BSc) from the University of British Columbia and of Forestry (MSc) from the University of Idaho.*

*Mrs. Jeany Snowball, an Eskimo of Fort Chimo, Que., designer of Ookpik, the Arctic owl (shown in the background), enjoys her first royalty cheque. Ookpik has become the symbol of the Department of Trade and Commerce at foreign fairs and exhibitions.*



**Eskimos**—Through Eskimo councils, co-operatives, education, economic development projects and regular wage employment, more and more of Canada's 13,600 Eskimos are taking their places of responsibility in the development of the Arctic.

For the young, education is the key to change. About 3,000 Eskimo children attend school regularly in home settlements or in larger population centres where they live in residence. During the year a hundred-bed wing was added to Akaitcho Hall at Yellowknife, doubling its capacity for academic and vocational pupils. New school facilities were opened at Churchill, Manitoba, and 149 Eskimo children were flown in from settlements in the Eastern Arctic to start academic and vocational courses.

New school programs and related instructional materials, indigenous to the north and within the context of the northern educational setting, have been developed for use in the Mackenzie and Eastern Arctic schools. Vocational education emphasizes the operation of heavy duty equipment, mechanics, and mining subjects. In 1964, instruction was available on an experimental basis, in such subjects as the preparation of fur pelts for market, tanning processes, the care of firearms and the preparation of canned and dried foods, in addition to special courses in such fields as boat and engine repair.

Although many Eskimos choose to live on the land, earning a living by trapping and hunting, they recognize that education is essential for social and economic progress. When students reach the required academic level, they qualify for territorial grants to learn trades that range from auto-mechanics to barbering either by attending southern Canadian schools or by apprenticeships in the North. Other territorial grants and loans are available to those who wish to attend universities, technical institutions, teachers' colleges and schools of nursing.

A worthwhile beginning has been made in extending adult education services to the settlements. For adult Eskimos, change is closely linked with the development of Eskimo co-operatives, other economic development programs, and wage employment.

During 1964, 19 co-operatives and two credit unions were active in the North with a total business turnover of close to \$1,000,000. Several other Arctic communities, such as Baker Lake, N.W.T., where the production of handicrafts and carvings reached the \$60,000 mark this year, also have a good economic basis for the establishment of co-operatives. Highlight of the handicrafts program was "Ookpik", a whimsical seal-skin owl from Fort Chimo. The Fort Chimo Co-operative will receive long-term benefits from the rights sold to commercial firms to produce Ookpik in various forms.

Efforts to harvest natural resources produced such northern food as frozen and fresh Arctic char, pickled herring, Beluga whale and seal for export as well as for local consumption. Seal and whale products were canned and sold in northern stores.

With the income from handicrafts, commercial fishing, and other economic development projects operated by co-operatives and other agencies, more Eskimo hunters are acquiring and learning to operate motor boats, auto-boggans and diesel-powered fishing boats purchased under the Eskimo Small Boats Assistance plan. Representatives from each settlement are trained in the maintenance and repair of this equipment.

Larger permanent homes are being built and paid for under the Eskimo Low Cost Housing program. During the year, 180 houses were shipped north for Eskimo buyers; a further 111 homes were provided for indigents, widows and the disabled. A survey of Arctic housing is being made. Its objective is to make permanent homes available to all Eskimo families within the next few years.



*Whitehorse, since 1953 the administrative seat of the territorial government of the Yukon, is a rapidly-growing city. It has a good airfield and all-weather road connection with principal centres of the area.*



TRILLIUM



FRINGED POLYGALA



PRICKLY PEAR CACTUS



FLEABANE



BITTERROOT



WILD IRIS



WATER ARUM



CARDINAL FLOWER

## WILD FLOWERS OF CANADA

*Trillium*, a member of the Lily family, is easily cultivated. If the flowers are picked, the plant will die. Great variations occur in numbers and colouring of petals.

*Prickly Pear Cactus* grows in sandy, dry soil at Point Pelee and in a few other places in Ontario.

*Fleabane*. This dwarf, daisy-like plant with gray, finely-divided leaves is a native of the Arctic but is found also on limestone gravel in Gaspé.

*Bitterroot*, a flower of the Western foothills, is sometimes cultivated in rock gardens.

*Wild Iris* is also known as Blue Flag. It frequents borders of streams and edges of lakes and blooms in early Summer. The rootstocks were used by Indians as medicine.

*Water Arum*, or Wild Calla, lives in cold bogs. It belongs to the Arum family as do Skunk-cabbage and Jack-in-the-Pulpit.

*Cardinal Flower*, of the Lobelia family, is a late summer bloomer along borders of ponds and streams.

*Pasque Flower*, also known as Wild, or Prairie, Crocus, is the provincial flower of Manitoba. The plant bears a single bluish, or purplish, flower an inch or more in length.



PURPLE-FRINGED ORCHID



SUNDEW



ORANGE HAWKWEED



ROSE

*Columbine* blooms early in Spring along rocky hill-sides and glens. There are many garden varieties.

*Buttercup*, a favourite wild flower, can also be a troublesome weed.

*Yellow Ladyslipper* is known as Moccasin Flower because the lip of the flower forms a large inflated sac which suggests an Indian moccasin.

*Fringed Gentian* is the showiest of the native gentians. It is a late summer bloomer and inhabits low, moist ground.

*Sheep Laurel* is a native of open peat bogs. The flower clusters of this small shrub open in June.

*Rose*. With its pretty pink blossoms and delightful fragrance, the wild rose is the emblem of Alberta.

*Orange Hawkweed*, a member of the giant Composite family, is also called Devil's Paint-Brush.

*Sundew* is an insectivorous bog plant which adds to its nitrogen resources by catching small insects.

*Purple-Fringed Orchid* is among the showiest of the native Eastern orchids. It is commonly found in wet meadows and in damp openings in rich, deciduous wood where it flowers from late June to August.

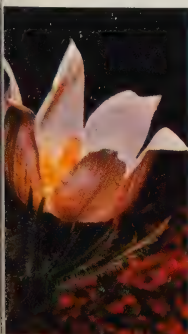
*Fringed Polygala*, a native of Eastern Canada, grows in damp places in rich, not-too-shady, woods.



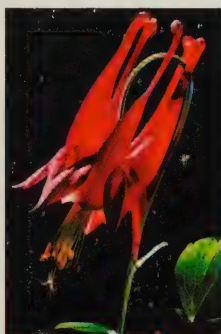
SHEEP LAUREL



FRINGED GENTIAN



COLUMBINE



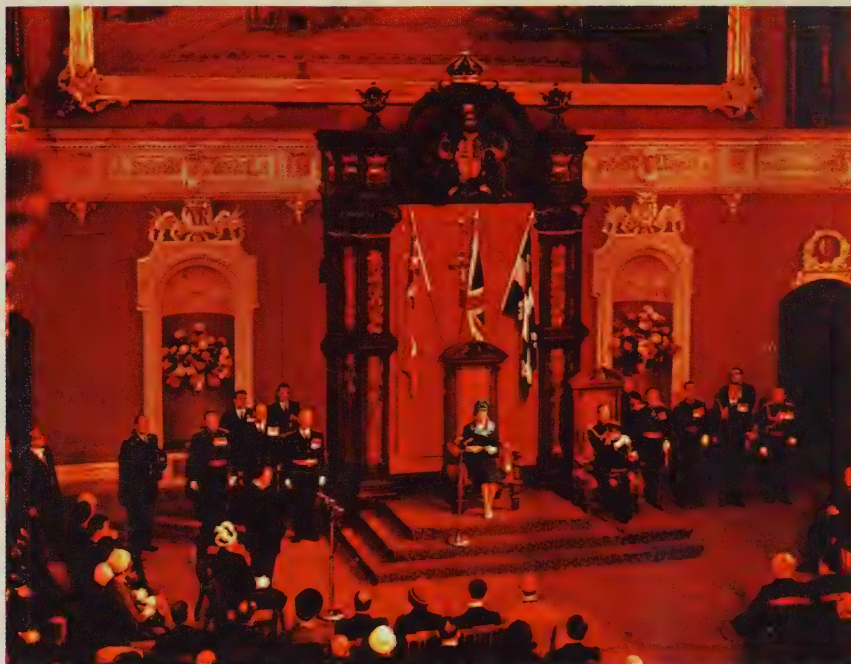
COLUMBINE



BUTTERCUP



YELLOW LADYSLIPPER



*After taking part in the centennial celebrations in Charlottetown, Her Majesty Queen Elizabeth II addressed the Quebec Legislature both in French and in English.*

## Government

# Federal State Nears Its Centenary

Canada is an independent nation, with a democratic parliamentary system of government. Queen Elizabeth II, who stands as a symbol of free association among the nations of the Commonwealth, is, as Queen of Canada, the head of the Canadian State. Parliament consists of the Queen, the Senate and the House of Commons. Senators are appointed on a regional basis for life<sup>1</sup>, and members of the House of Commons are elected by the people of Canada for maximum terms of five years. The executive power is exercised by the Cabinet, chosen by the Prime Minister from among his parliamentary supporters. He and his Cabinet colleagues are collectively responsible to the House of Commons and can remain in office only so long as they command the confidence of that House.

The modern Canadian federal state was established by the British North America Act of 1867, which united the three British North American provinces of Canada, New Brunswick and Nova Scotia into one country, divided into four provinces: Ontario, Quebec, New Brunswick and Nova Scotia. British Columbia entered the Union in 1871 and Prince Edward Island in 1873. The provinces of Manitoba (1870), Saskatchewan and Alberta (1905) were created out of portions of the territories formerly held by the Hudson's

<sup>1</sup> Legislation to retire senators at 75 was recently debated in Parliament.

Bay Company and admitted to the Union in 1870, and Newfoundland entered the Union in 1949. Canada now consists of ten provinces and the remaining northern territories, not included in any province, known as the Yukon Territory and the Northwest Territories.

While the British North America Act is popularly regarded as the Constitution of Canada, it is not an exhaustive statement of the laws and rules by which Canada is governed. The Constitution of Canada in its broadest sense includes other statutes of the United Kingdom Parliament (e.g., the Statute of Westminster, 1931), statutes of the Parliament of Canada relating to such matters as the succession to the Throne, the demise of the Crown, the Governor General, the Senate, the House of Commons, electoral districts, elections, Royal Style and Titles, and also statutes of provincial legislatures relating to provincial government and provincial legislative assemblies.

The B.N.A. Act divided legislative and executive authority between Canada on the one hand and the several provinces on the other. The Parliament of Canada was assigned authority over control of the Armed Forces, the regulation of trade and commerce, banking, credit, currency and bankruptcy, criminal law, postal services, the fisheries, patents and copyrights, the census and statistics, the raising of money by taxation and, in the field of communication, such matters as navigation and shipping, railways, canals, and telegraphs. In addition, the Federal Government was endowed with a residual authority in matters beyond those specifically assigned to the provincial legislatures and including the power to make laws for the peace, order and good government of Canada.

*The Changing of the Guard on the spacious lawns of the Parliament Buildings, Ottawa, attracts an increasing number of tourists.*



The provinces, on the other hand, were granted powers embracing mainly such matters of local or private concern as property and civil rights, education, civil law, provincial company charters, municipal government, hospitals, licences, the management and sale of public lands, and direct taxation within the province for provincial purposes.

Judicial authority was not similarly divided, provincial and federal courts having jurisdiction with respect to both federal and provincial laws.

The preservation of both the English and the French languages was safeguarded by the provision that either language may be used in the debates of the Parliament of Canada and of the Legislature of Quebec and in any Federal court in Canada; and that both languages shall be used in the respective records and journals and in the published Acts of the Parliament of Canada and of the Legislature of Quebec.

In their pioneer effort at Constitution-making for the federating colonies, the Father of Confederation neglected to make provision for amending the British North America Act of 1867. The work of devising amendment procedure within Canada, which would safeguard basic provincial and minority rights (such as noted above) while possessing the degree of flexibility needed by both the Federal Government and the provinces in their co-operative endeavours to meet rapidly changing social and economic conditions as well as overriding national purposes and responsibilities, is one of the major tasks currently engaging the attention of both levels of government in Canada either in their legislative sessions or in federal-provincial ministerial conferences.

Canada has played a leading part among the British people in the evolutionary development from colonial communities to sovereign nations, united by a common allegiance to the Crown, freely associated as members of the Commonwealth of Nations, and possessing equality of status with Britain in both domestic and foreign affairs.

## The Parliament of Canada

Federal legislative authority is vested in the Parliament of Canada, consisting of the Queen, the Senate and the House of Commons. Both the House of Commons and the Senate must pass all legislative bills before they receive Royal Assent through the Governor General. Both bodies may originate legislation, but only the House of Commons may introduce bills for the expenditure of public money or the imposition of any tax.

**The Queen.** Her Majesty Queen Elizabeth II is Queen of Canada. She is also Head of the Commonwealth and symbolizes the association of the member countries. In 1952 it was decided by the Commonwealth Prime Ministers meeting in London to establish new forms of title for each country. Since 1953 the title of the Queen, so far as Canada is concerned, is "Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith".

Sovereigns of Canada since Confederation in 1867 are as follows:

<i>Sovereign</i>	<i>Dynasty</i>	<i>Year of Birth</i>	<i>Date of Accession</i>
Victoria.....	House of Hanover.....	1819	June 20, 1837
Edward VII.....	House of Saxe-Coburg and Gotha....	1841	Jan. 22, 1901
George V.....	House of Windsor.....	1865	May 6, 1910
Edward VIII.....	House of Windsor.....	1894	Jan. 20, 1936
George VI.....	House of Windsor.....	1895	Dec. 11, 1936
Elizabeth II.....	House of Windsor.....	1926	Feb. 6, 1952

**The Governor General.** The personal representative of the Queen in Canada is the Governor General, appointed by Her Majesty on the advice of her Canadian Prime Minister for a term of approximately five years. He exercises the executive authority of the Queen in relation to the Government of Canada. On the recommendation of his responsible advisers, he summons, prorogues and dissolves Parliament, assents to Bills and exercises other executive functions.

Governors General of Canada since Confederation are as follows:

<i>Name</i>	<i>Date of Taking Office</i>	<i>Name</i>	<i>Date of Taking Office</i>
Viscount Monck.....	July 1, 1867	The Duke of Devonshire..	Nov. 11, 1916
Lord Lisgar.....	Feb. 2, 1869	Lord Byng of Vimy.....	Aug. 11, 1921
The Earl of Dufferin.....	June 25, 1872	Viscount Willingdon.....	Oct. 2, 1926
The Marquis of Lorne....	Nov. 25, 1878	The Earl of Bessborough..	Apr. 4, 1931
The Marquis of Lansdowne	Oct. 23, 1883	Lord Tweedsmuir.....	Nov. 2, 1935
Lord Stanley of Preston...	June 11, 1888	The Earl of Athlone.....	June 21, 1940
The Earl of Aberdeen.....	Sept. 18, 1893	Viscount Alexander of	
The Earl of Minto.....	Nov. 12, 1898	Tunis.....	Apr. 12, 1946
Earl Grey.....	Dec. 10, 1904	The Rt. Hon. Vincent	
H.R.H. The Duke of		Massey.....	Feb. 28, 1952
Connaught.....	Oct. 13, 1911	Gen. Georges P. Vanier...	Sept. 15, 1959

**The Privy Council.** The Queen's Privy Council for Canada is composed of nearly 100 members appointed for life by the Governor General on the advice of the Prime Minister. The Council consists chiefly of present and former Ministers of the Crown, but occasionally membership in the Privy Council is conferred on a distinguished visitor. H.R.H. The Duke of Windsor, Earl Alexander of Tunis and H.R.H. The Prince Philip, Duke of Edinburgh are all members of Canada's Privy Council. The Council does not meet as a functioning body and its constitutional responsibilities as adviser to the Crown are performed exclusively by the Ministers who constitute the Cabinet of the day.

**The House of Commons.** Members of the House of Commons are elected in a general election usually held subsequent to the normal dissolution of Parliament by the Governor General on the advice of the Prime Minister at any time up to the end of five years after the last election. Occasionally a general election may be called subsequent to a grant of dissolution following defeat of a government measure or passage of a vote of want of confidence by the House in the government of the day.

Electors include all Canadian citizens or British subjects, male or female, of the age of 21 or over, who have been resident in Canada for 12 months prior



*One of the most beautiful official residences is Bois de Coulonge, near Quebec City. Built in the 1780's, and bought by the Canadian Government in 1854 as a vice-regal residence, it was transferred to the provincial government in 1870 and is now the home of the lieutenant-governor of Quebec.*

to polling day, with certain exceptions, such as persons confined in penal institutions or mental hospitals, federally-appointed judges and returning officers for electoral districts.

Seats in the House are distributed geographically as follows:<sup>1</sup>

Newfoundland.....	7	Saskatchewan.....	17
Prince Edward Island.....	4	Alberta.....	17
Nova Scotia.....	12	British Columbia.....	22
New Brunswick.....	10	Yukon Territory.....	1
Quebec.....	75	Northwest Territories.....	1
Ontario.....	85		
Manitoba.....	14		
		TOTAL.....	265

The current Parliament of Canada, the 26th since Confederation in 1867, was elected on April 8, 1963. Party standing in the House of Commons as of July 8, 1965, with party leadership in brackets, was as follows: Liberals, 128 (Rt. Hon. Lester Bowles Pearson); Progressive Conservatives, 93 (Rt. Hon. John George Diefenbaker); Social Credit Party, 9 (R. N. Thompson); Social Credit Rally, 13 (Réal Caouette); New Democratic Party, 18 (T. C. Douglas); Independent, 2. Six members of the Commons are women.

The leader of the party winning the majority of seats in the general election is called upon by the Governor General, as representative of the Queen, to form a government. He becomes the Prime Minister and generally chooses party colleagues from among the elected members to form the Cabinet. If he wishes to have in his Cabinet someone who is not a member of the House of Commons, that person must secure a seat in the House within a short time through a by-election or receive appointment to the Senate by the Governor General upon the nomination of the Prime Minister. Almost all Cabinet Ministers are also heads of executive departments of the government, for the work of which they are responsible to the House of Commons.

The Cabinet is responsible for determining all important policies of government and securing the passage of such legislation, financial measures and administrative provisions as their supporters may approve. The Ministers of the Crown, as the members of the Cabinet are called, are chosen generally to represent all regions of the country and its principal cultural, religious and social interests.

<sup>1</sup> Readjustment of representation in the Commons through revision of electoral boundaries, by provinces, was in an advance stage of completion in the summer of 1965.

The members of the Ministry, as of July 8, 1965, are listed below according to precedence:

Rt. Hon. Lester Bowles Pearson.....	Prime Minister
Hon. Paul Joseph James Martin.....	Secretary of State for External Affairs
Hon. John Whitney Pickersgill.....	Minister of Transport
Hon. Paul Theodore Hellyer.....	Minister of National Defence
Hon. Walter Lockhart Gordon.....	Minister of Finance and Receiver General
Hon. Mitchell Sharp.....	Minister of Trade and Commerce
Hon. George James McIlraith.....	Minister of Public Works
Hon. Arthur Laing.....	Minister of Northern Affairs and National Resources
Hon. Maurice Lamontagne.....	Secretary of State of Canada
Hon. Lucien Cardin.....	Minister of Justice and Attorney General
Hon. Allan Joseph MacEachen.....	Minister of Labour
Hon. Hédard Robichaud.....	Minister of Fisheries
Hon. J. Watson MacNaught.....	Minister of Mines and Technical Surveys
Hon. Roger Teillet.....	Minister of Veterans Affairs
Hon. Judy LaMarsh.....	Minister of National Health and Welfare
Hon. Charles Mills Drury.....	Minister of Industry and Minister of Defence Production
Hon. Guy Favreau.....	President of the Queen's Privy Council for Canada
Hon. John Robert Nicholson.....	Minister of Citizenship and Immigration
Hon. Harry Hays.....	Minister of Agriculture
Hon. René Tremblay.....	Postmaster General
Hon. John Joseph Connolly.....	Minister without Portfolio and Leader of the Government in the Senate
Hon. Maurice Sauvé.....	Minister of Forestry
Hon. Edgar John Benson.....	Minister of National Revenue
Hon. Léo Alphonse Joseph Cadieux.....	Associate Minister of National Defence
Hon. Lawrence T. Pennell.....	Solicitor General
Hon. Jean-Luc Pepin.....	Minister without Portfolio

**The Opposition.** The choice of the Canadian electorate not only determines who will govern Canada but, by deciding which party receives the second largest number of seats in the House of Commons, it designates which of the major parties becomes the Official Opposition. The function of the Opposition is to offer intelligent and constructive criticism of the government of the day. In 1905, the importance of the work of the Leader of the Opposition was recognized by the provision of a special salary to be paid him in addition to his indemnity as a member of the House.

**The Senate.** The Senate, sometimes referred to as "the sober second thought of Parliament", in that all legislation originating in the House of Commons must be read three times, debated and passed in the Senate before receiving Royal Assent, is composed of 102 members appointed for life<sup>1</sup> by the Governor General, on the nomination of the Prime Minister. Senators are chosen to represent the provinces of Canada, as follows:

Ontario.....	24	Western Provinces.....	24
Quebec.....	24	Manitoba.....	6
Atlantic Provinces.....	30	British Columbia.....	6
Nova Scotia.....	10	Alberta.....	6
New Brunswick.....	10	Saskatchewan.....	6
Prince Edward Island.....	4		
Newfoundland.....	6	TOTAL.....	102

The Yukon Territory and the Northwest Territories at present lack representation in the Senate.

Party standing in the Senate as of July 8, 1965, was as follows: Liberal, 59; Progressive Conservative, 32; Independent, 2; Independent Liberal, 1; vacant, 8; total 102.

<sup>1</sup> Legislation to retire senators at 75 was recently debated in Parliament.

While the Ministers of the Crown carry the political responsibilities of their respective departments, the federal civil service forms the staffs of the 20 departments and of various boards, commissions, corporations, bureaus and other agencies of the government. The day-to-day administration of a department is handled by a permanent head, usually known as deputy minister. As of December 31, 1964, there were 339,095 federal employees.

## Provincial Government

Similar political institutions and constitutional usages operate in the government of the ten provinces as in that of the nation as a whole. In each province the Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council, usually for a term of five years. The powers of the Lieutenant-Governor in the provincial sphere are essentially the same as those of the Governor General in the federal sphere.

The Legislature of each of the provinces comprises, in addition to the Lieutenant-Governor, a Legislative Assembly elected for a term of five years and, for Quebec only, a Legislative Council of 24 members appointed for life by the Lieutenant-Governor in Council. The franchise in provincial elections is granted, generally speaking, to every adult 21 years of age or over, although in Quebec and Saskatchewan the age is 18; in Alberta and British Columbia, 19. The conventions of cabinet government operate in the Legislative Assembly of each of the provinces as in the House of Commons at Ottawa. Provincial premiers and administrations as at April 1, 1965, were as follows:

Newfoundland.....	Hon. J. R. Smallwood.....	Liberal
Prince Edward Island.....	Hon. Walter R. Shaw.....	Progressive Conservative
Nova Scotia.....	Hon. R. L. Stanfield.....	Progressive Conservative
New Brunswick.....	Hon. Louis J. Robichaud.....	Liberal
Quebec.....	Hon. Jean Lesage.....	Liberal
Ontario.....	Hon. John P. Robarts.....	Progressive Conservative
Manitoba.....	Hon. Dufferin Roblin.....	Progressive Conservative
Saskatchewan.....	Hon. W. R. Thatcher.....	Liberal
Alberta.....	Hon. Ernest C. Manning.....	Social Credit
British Columbia.....	Hon. W. A. C. Bennett.....	Social Credit

## Territorial Government

The vast and sparsely-populated regions of Northern Canada lying outside the ten provinces and comprising Yukon Territory and the Northwest Territories have attained both elected representation in the House of Commons and a measure of local self-government. The local government of Yukon Territory is composed of a resident Commissioner, appointed by the Federal Government, and a locally-elected Legislative Council of seven members, meeting at Whitehorse.

The government of the Northwest Territories is vested in a full-time Commissioner, who resides in Ottawa, and is assisted by a Council of nine members of whom four are elected by popular franchise in the Territories and five are appointed by the Federal Government one of whom is a federal official. The Council meets annually in the Territories and at least once each year at Ottawa which is the seat of government. Administration of the Northwest Territories and the Yukon Territory, of Eskimo affairs and of the resources of both territories, except game, is the responsibility of the Northern Administration Branch of Northern Affairs and National Resources.

## Local Government

As local government at the municipal level falls under the jurisdiction of the provinces, there are ten distinct systems of municipal government in Canada, as well as many variations within each system. The variations are attributable to differences in historical development and in area and population density of the 4,300 incorporated municipalities. Possessing the power exclusively to make laws respecting municipal institutions, the provincial legislature of each province has divided its territory into varying geographical areas known generally as municipalities and more particularly as counties, cities, towns, villages, townships, rural municipalities, or municipal districts.

Municipalities are incorporated by provincial legislation and have various powers and responsibilities suited to their classification. A municipality is governed by an elected council whose head may be called the mayor, reeve, warden or overseer, and the other citizens who are its members may be known as controllers, aldermen or councillors. The responsibilities of the municipalities are generally those most closely associated with the citizen's everyday life, his well-being and his protection.

## The Judiciary

Canadian courts of law are independent bodies. Each province has its police, division, county and supreme courts, with right of appeal being available throughout provincial courts and to the federal Supreme Court of Canada. At the federal level there is also the Exchequer Court, in which proceedings instituted by or against the Crown may be launched and from which appeals may be made to the Supreme Court. All judges, except police magistrates and judges of the courts of probate in Nova Scotia and New Brunswick, are appointed by the Governor General in Council and their salaries, allowances and pensions are fixed and paid by the Parliament of Canada. They cease to hold office on attaining the age of 75 years.

Legislation concerning criminal law and the procedure in criminal matters is under the jurisdiction of the Parliament of Canada. The provinces administer justice within their own boundaries, including the organization of civil and criminal courts and the establishment of procedure in civil matters.

## External Affairs

Canada, which has participated in every major United Nations peace-keeping operation since 1948, once more was deeply engaged in 1964, this time in Cyprus. A conference of military experts from 23 nations to consider the technical aspects of United Nations' peace-keeping operations was also held in Ottawa in the latter part of the year.

In addition to its strong support of the United Nations, the country continued its active participation in Commonwealth affairs and in the North Atlantic Treaty Organization. In the field of Canadian-American relations, perhaps the most important single achievement during 1964 was the completion of negotiations with respect to the development of the Columbia River, instruments of ratification being exchanged in September. Canadian grant and development loan assistance was increased by approximately 50 per cent to \$140 million during fiscal 1964-65. A program of Special Development Loans was initiated in which Latin American countries, among others, will participate.

## Posts Abroad

At the end of December 1964, Canada was represented abroad by the following diplomatic and consular posts:

Embassies (44)		
Argentina <sup>1</sup>	France	Peru <sup>10</sup>
Austria	Germany	Poland
Belgium <sup>2</sup>	Greece	Portugal
Brazil	Guatemala	South Africa
Cameroun <sup>3</sup>	Haiti	Spain <sup>11</sup>
Chile	Indonesia	Sweden
Colombia	Iran	Switzerland <sup>12</sup>
Congo (Democratic Republic of the)	Ireland	Turkey
Costa Rica <sup>4</sup>	Israel <sup>5</sup>	U.S.S.R.
Cuba	Italy <sup>6</sup>	United Arab Republic <sup>13</sup>
Czechoslovakia	Japan <sup>7</sup>	U.S.A.
Denmark	Lebanon <sup>8</sup>	Uruguay
Dominican Republic	Mexico	Venezuela
Ecuador	Netherlands	Yugoslavia
Finland	Norway <sup>9</sup>	
Offices of High Commissioners (12)		
Australia		
Britain		
Ceylon		
Ghana <sup>14</sup>		
India		
Jamaica		
Malaysia <sup>15</sup>		
New Zealand		
Nigeria <sup>16</sup>		
Pakistan		
Trinidad and Tobago		
United Republic of Tanzania <sup>17</sup>		
Consulates General (13)		
France:		
Bordeaux		
Marseilles		
Germany:		
Hamburg		
Iceland:		
Reykjavik (Honorary)		
Italy:		
Milan		
Philippines:		
Manila		
United States:		
Boston		
Chicago		
Los Angeles		
New Orleans		
New York		
San Francisco		
Seattle		
Consulates (5)		
Brazil:		
São Paulo		
Germany:		
Duesseldorf		
United States:		
Cleveland		
Detroit		
Philadelphia		
Military Mission (1)		
Berlin		
International Supervisory Commissions (3)		
Cambodia	Laos	Vietnam
Permanent Missions to International Organizations (9)		
Brussels: (Canadian Ambassador to Belgium, accredited):		
European Economic Community		European Atomic Energy Community
Geneva:		
United Nations		New York:
General Agreement on Tariffs and Trade		United Nations
(1964) Trade Negotiating Conference		
Paris:		
North Atlantic Council		Organization for European Economic Co-operation and Development
United Nations Educational, Scientific and Cultural Organization		
Heads of Posts holding Additional Accreditation to:		
<sup>1</sup> Paraguay.	<sup>2</sup> Luxembourg.	<sup>3</sup> Central African Republic, Chad, Congo (Brazzaville) and Gabon.
<sup>4</sup> El Salvador, Honduras, Nicaragua and Panama.	<sup>5</sup> Cyprus.	
<sup>6</sup> Malta.	<sup>7</sup> Korea.	<sup>8</sup> Jordan.
<sup>9</sup> Iceland.	<sup>10</sup> Bolivia.	<sup>11</sup> Morocco.
<sup>12</sup> Tunisia.	<sup>13</sup> Sudan.	<sup>14</sup> Guinea, Ivory Coast, Togo and Upper Volta.
<sup>15</sup> Burma	<sup>16</sup> Dahomey, Niger, Senegal and Sierra Leone.	<sup>17</sup> Kenya and Uganda.

## The Commonwealth

One of the main elements of Canada's foreign policy is the extension and development of a strong Commonwealth of Nations. At the end of 1964, the Commonwealth was composed of 20 independent countries—Britain, Canada, Australia, New Zealand, India, Pakistan, Ceylon, Ghana, Malaysia, Nigeria, Cyprus, Sierra Leone, United Republic of Tanzania, Jamaica, Trinidad and Tobago, Uganda, Kenya, Malawi, Malta and Zambia.



*The illuminated fountains in Memorial Park, Winnipeg, cast an eerie glow on the Legislative Building and the "Golden Boy" which crowns the structure.*

Flexibility and diversity are hallmarks of the Commonwealth association. An examination of the constitutions of the 20 members shows that ten are monarchies recognizing Her Majesty Queen Elizabeth II as Head of State; one country (Malaysia) has its own monarch; eight countries (India, Pakistan, Ghana, Cyprus, United Republic of Tanzania, Nigeria, Kenya and Zambia) are republics; and one country (Uganda) has a presidential form of government but does not describe itself as a republic.

The Commonwealth offers Canada close relations with a group of nations that, despite their geographic, economic, racial, cultural and political diversities, find common ground in this unique association, which finds its highest expression in the periodic meetings of prime ministers and presidents. Within the Commonwealth family of nations there is constant consultation and co-operation in many undertakings. A large portion of Canada's overseas economic aid for developing countries continues to be directed to Commonwealth territories through the Colombo Plan, the Canada-West Indies Aid Program and the Special Commonwealth Africa Aid Program (SCAAP). Other forms of mutual assistance, such as military training and academic fellowships and scholarships, are also provided by Canada on the basis of the Commonwealth relation.

## NATO

Canada's defence policy, which is an integral part of its foreign policy, is designed to ensure national security and the preservation of world peace through collective arrangements within the United Nations and the North Atlantic Treaty Organization. Canada's main defence commitments are in support of the NATO Alliance. Canada provides substantial forces in NATO Europe and the Atlantic area and, through its participation in NORAD, contributes forces for the defence of the Canada-United States region of NATO. NATO is much more than a military alliance, and Canada takes an

active part in the work and deliberations of the North Atlantic Council which provides the forum where Canada and its NATO partners can exchange full and frank information, opinions and intentions on the political, economic, cultural and scientific developments of today.

As a member of the NATO Alliance, Canada provides assistance to its allies by the provision of military equipment, aircrew training, and logistic support for matériel. Under its Mutual Aid Program, Canada is also a regular contributor to the NATO military budgets and the common infrastructure program.

## United Nations

Firm support for the United Nations is an essential element of Canadian foreign policy. Canada has contributed over the years to the mediation efforts of the organization in Kashmir, Indonesia and Palestine, and supported the collective United Nations action that stopped aggression in Korea. In the 1956 Middle East crisis, Canada played a significant role and continues to participate in the United Nations Emergency Force. In 1960, Canada responded to a United Nations' request for support of its operations in the Congo by supplying military and civilian specialists and by pledging political and financial support. In 1962, Canada provided aircraft, pilots and maintenance crews to assist the United Nations Temporary Executive Authority (UNTEA) in the exercise of its peace-keeping functions in West New Guinea and later supplied an air unit for United Nations Yemen Observation Mission (UNYOM). In 1964, it sent a large contingent to Cyprus (UNFICYP) to assist efforts of the United Nations to bring an end to the fighting between the Greek and Turkish communities.

In the field of disarmament, Canada believes that the United Nations should play an active role. As a member of the Eighteen-Nation Disarmament Committee, Canada participates directly in the task of negotiating general and complete disarmament under effective international control and seeking agreement on measures to reduce international tension and lessen the possibility of war. In the Canadian view it is of particular importance at this juncture to limit the spread of nuclear weapons and to extend to underground testing the treaty-banning nuclear tests in the atmosphere, in outer space, and under water.

Canada also participated directly in the work of the United Nations through its membership in various United Nations bodies. During 1964, Canada was a member of the Commission on Narcotic Drugs, the Social Commission, the Economic Commission for Latin America, the Executive Committee of the Office of the United Nations Children's Fund, and the Governing Council of the Special Fund which is designed to provide systematic and sustained assistance in fields essential to the integrated, technical, economic and special development of less-developed countries.

The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only Specialized Agency of the United Nations with headquarters in Canada. The Fifteenth Session of the ICAO Assembly was held in Montreal from June 22 to July 19, 1965.

Canada was also a member of the Executive Committee of the Office of the United Nations High Commissioner for Refugees (since the Second



*Members of Canada's famed "Van Doos"—"A" company, 1er Bataillon, Royal 22e Regiment—are stationed in the Kyrenia mountain range, Cyprus. The soldiers are from Quebec, British Columbia, New Brunswick and Ontario.*

World War, Canada has received approximately one-quarter of the world refugees who have been received overseas) and participated in the work of the Human Rights Commission, the National Law Commission and the Commission on the Peaceful Uses of Outer Space. Canada maintains Permanent Missions at the United Nations in New York and Geneva in order to follow events at both the headquarters and the European office of the organization.

Canada is the sixth largest contributor to the United Nations regular budget and pays 3.12 per cent of the organization's net expenditures. In 1964, Canada's share of the gross regular budget of \$101,330,000 was approximately \$2,530,000, and its assessment for the United Nations peace-keeping operations in the Middle East and Congo was about \$1 million. The cost of its contingent in Cyprus was about \$4 million in 1964. In addition, Canada makes voluntary contributions to special United Nations programs such as the Expanded Program of Technical Assistance (EPTA), the Special Fund, the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Fund (UNICEF), the United Nations Relief and Works Agency in the Middle East (UNRWA).

Canada's total assessment and contributions to the United Nations, its Specialized Agencies and related bodies totalled approximately \$170 million during the period 1945-63 and about \$24.5 million in 1964, including a further installment of \$7.87 million for the International Development Association.

Canada has consistently taken an active interest in United Nations financial questions, particularly those related to peace-keeping operations. In this regard Canada has played an active role as a member of the Working Group of 21, which is responsible for studying special methods of financing peace-keeping operations, and took the initiative in convening a meeting of experts to consider the technical problems involved in peace-keeping operations. It was held in Ottawa in November 1964 and was attended by representatives of 23 countries.

## Canada and the United States

Obviously, Canadian relations with the United States constitute a very important element in Canada's external relations. Reflected in the day-to-day relations between the two countries are not only co-operation and mutual respect based upon each country's recognition of the sovereignty of the other but also the interdependence of their common futures. The facts of geography and easy communications have encouraged the growth of close and friendly relations, and Canada and the United States have chosen to develop and maintain a close partnership in their common defence of democratic government and individual liberties, in economic, trade and cultural relations, in scientific research and in the resolution of problems concerning waters along their boundaries.

Canada and the United States are both active members of the United Nations and its Specialized Agencies, NATO, GATT and OECD. There are also many bilateral bodies in which the two countries co-operate. These include the Canada-United States Committee on Trade and Economic Affairs, the Permanent Joint Board on Defence, the International Joint Commission and many other similar governmental groups. These are in addition to the numerous private organizations and professional associations fostering good relations and resolving problems between the two neighbours.

## Canada and Europe

For historical, political and other reasons, Canada maintains close and extensive relations with Britain and France, as well as with most other European countries. Its relations with Europe, which are deeply rooted in Canada's origins, spring naturally from its traditional and special relations with Britain, and also from the common cultural heritage which the country shares with Britain and France. These relations have been strengthened by Canada's substantial participation on European soil in the two World Wars.

With a number of Western European countries, Canada is today an active member of NATO, the OECD and numerous other international bodies, such as GATT and the United Nations, which group countries from other areas also. Traditionally, Britain and, to a lesser extent, several Western European countries have been among Canada's major partners in external trade, also constituting our chief source of immigrants. Canada now maintains resident diplomatic missions in almost all Western European countries and in several capitals of Eastern Europe.

## Canada and the Middle East

Canada has from the beginning participated fully in UN activities in the Middle East, which has since the Second World War been a focus of tension and conflict. This has made necessary an important UN peace-keeping role. In 1964 Canadian officers continued to serve with the United Nations Truce Supervision Organization located along Israel's borders with the neighbouring Arab states. Canada was closely associated with the original formation of the United Nations Emergency Force, and Canadian forces in Sinai and Gaza continued during 1964 to be an important component of UNEF.



*Earnscliffe, Ottawa, official residence of the British High Commissioner.*

Canada also participated in the United Nations Observation Mission in Yemen, which was given the task, in June 1963, of observing and verifying U.A.R. and Saudi Arabian actions to carry out disengagement undertakings. The UN terminated this mission in September 1964. Another facet of UN activity in the Middle East is the United Nations Relief and Works Agency for Palestine Refugees (UNRWA). Canada's contribution in 1964 to UNRWA's essential work for these refugees was \$1 million.

## **Canada and the Far East**

Canada has had extensive contacts, both official and private, with the Far East over many years. It maintains resident diplomatic missions in Indonesia, Japan (also accredited to Korea), and Malaysia (also accredited to Burma and Thailand), and a Consulate-General in the Philippines. There is an important Trade Commissioner's Office in Hong Kong. In addition to normal diplomatic relations with the countries of the area and to assistance under the Colombo Plan, Canada has, since 1954, had extensive peace-keeping commitments in Cambodia, Laos and Vietnam, where Canadian civilian and military officers serve with the International Supervisory and Control Commissions created by the Geneva Conferences of 1954 and 1961-62.

## **Canada and Latin America**

Canada has completed the establishment of formal diplomatic relations with all the Republics of Latin America and now has 14 resident diplomatic missions in the region. Its relations with these countries have increased appreciably during the past few years, politically, culturally, commercially and diplomatically. It belongs to three inter-American organizations linked with the Organization of American States; the Pan-American Institute of Geography and History, the Inter-American Statistical Institute and the Inter-American Radio Office.

Canada has also been developing closer economic ties with Latin America. Since 1961 it has been a member of the United Nations Economic Commission for Latin America and has sent observer groups to the annual ministerial meetings of the Inter-American Economic and Social Council, which is an

organ of the Organization of American States. Trade missions of Canadian businessmen and government officials to Latin American countries have been promoted. Of particular importance, the Canadian Government has directly facilitated Canadian exports to Latin America through long-term credits it has provided for the export of capital goods under the Export Credits Insurance Act. These credits now total more than \$100 million. In December 1964, the Canadian Government signed an agreement with the Inter-American Development Bank under which Canada agreed to make available \$10 million to finance development projects in Latin America.

Canada has also been officially represented at a growing number of meetings and conferences concerned with Latin America and inter-American affairs. In 1964 these included the first meeting of the Governors of the Central Banks of the American Continent held in Guatemala, the eighth meeting of the Directing Council of the Pan-American Institute of Geography and History in Mexico City, and the eighth meeting of the Committee on Improvement of National Statistics of the Inter-American Statistical Institute held in Panama.

Official Canadian observers attended the second Inter-American Meeting of Government Experts on Civil Aviation in Santiago, the fifteenth meeting of the Directing Council of the Pan-American Health Organization in Mexico City, the fifth Inter-American Indian Conference in Quito, and the annual meetings of the Inter-American Economic and Social Council in Lima.

## **Canada and Africa**

Relations with Africa have become increasingly important to Canada as many new countries have become independent and have begun to take an active part in international affairs. Canada maintains diplomatic missions in Ghana, Nigeria, Cameroun, Democratic Republic of the Congo, South Africa, United Republic of Tanzania and the U.A.R., and has diplomatic relations by accreditations from these missions with most of the African states.

## **External Aid Programs**

In recognition of the pressing needs of the developing areas of the world, Canada participates in a number of economic, educational and technical assistance programs abroad. The major part of such assistance is extended under six bilateral grant aid programs in the form of Canadian goods and services.

For the fiscal year 1964-65 Parliament provided for a substantial increase in the aid appropriations and, in addition, approved a new program of long-term special loan assistance. Initially, \$50 million has been made available for development loans on terms of 50-year maturity, 10-year grace period, no interest rate and a  $\frac{3}{4}$  of 1 p.c. service charge.

The oldest and largest of the bilateral grant-aid programs is the Colombo Plan for Co-operative Economic Development in South and Southeast Asia, under which Canada has, since 1951, made available some \$464,000,000 in assistance, mainly to fellow Commonwealth countries of India, Pakistan, Ceylon and Malaysia with significant amounts of technical assistance being provided to the French-speaking states of Southeast Asia. Canada's annual allocation to the Colombo Plan area has been approximately doubled this year.



*Students from South Viet Nam, studying in Canada, 1964-65, are being welcomed by the Hon. Paul Martin, Secretary of State for External Affairs.*

Canadian aid, however, has not been limited to South and Southeast Asia and new programs have been introduced over the years. In 1958, when the West Indies Federation was being formed, Canada introduced a grant-aid program for the area. Expenditures for the Commonwealth Caribbean comprising the former units of the Federation, as well as for British Guiana and British Honduras, have been running at an annual average of \$2 million. The program was expanded in 1964-65 to approximately five times the previous level.

With the emergence of independent states in Africa, a program called SCAAP—the Special Commonwealth Africa Aid Program—was launched on Commonwealth initiative. Canada allocated \$3.5 million annually beginning in 1961, the main recipients being Nigeria, Ghana, Sierra Leone, Tanzania, Uganda and Kenya. This program has since been extended with an allocation of approximately \$10 million in grant aid and development loans in 1964-65.

At about the time SCAAP was formed, Canada also introduced a program of educational assistance to the independent French-speaking states of Africa at an annual level of approximately \$300,000. A program of approximately \$4 million is planned for the current fiscal year, representing the greatest proportional increase in allocations.

Two other programs complete the present grant aid roster—the Commonwealth Technical Assistance Program, under which assistance is available for other Commonwealth Territories, and the Commonwealth Scholarship Plan for some 250 Commonwealth students to study in Canada each year. For Latin America an arrangement has been made with the Inter-American Development Bank whereby Canada will extend \$10 million in development loans for economic, educational and technical projects and programs.

Capital project assistance, which includes the construction of power stations, transmission lines and industrial plants, the supply of machinery and equipment and the carrying out of surveys and feasibility studies, accounts for nearly half of Canada's aid expenditures. Commodity assistance, or the supply of industrial raw materials and foodstuffs, constitutes only a slightly lower proportion of the total effort. Technical assistance permits individual Canadian teachers or advisers to go abroad and students to come to Canada.

These proportions, however, are not similar in individual programs. Commodity assistance, for example, has been concentrated on the more advanced nations of the Colombo Plan. Countries such as India and Pakistan have already achieved a certain degree of industrial development and urgently require foreign raw materials to sustain production from existing industry as well as project assistance for the creation of new industries.

The African countries have not yet reached this stage of development and have requested technical assistance, particularly in the field of education, to create a pool of skilled manpower without which industrial development cannot take place. Technical assistance, therefore, has formed a much higher proportion (about 60 p.c.) of the Canadian aid effort in Africa. Capital assistance has been largely concentrated on the construction of schools or the carrying out of basic surveys of resources.

Under these bilateral programs, recipient countries propose appropriate projects for available aid funds. After careful investigation of proposals, Canada decides which projects can be undertaken with Canadian goods and services.

In addition to the bilateral programs described above, Canada contributes to multilateral economic and technical assistance programs of the United Nations and its specialized agencies. Canada also extends loans and advances to other international organizations such as the International Bank for Reconstruction and Development and the International Development Association. Under the Export Credits Insurance Act, Canada also is in a position to extend long-term commercial credits for development purposes in the under-developed countries.

*Under Canadian External Aid arrangements, a Trades Training Centre has been constructed at Accra, Ghana. The Centre, which will train some 300 students annually, is made of Canadian prefabricated materials.*





*The rich prairie land behind Grand Coulee and the elevators in the foreground are reminders that Saskatchewan is the foremost grain-producing province of Canada. In 1964 wheat production in Saskatchewan totalled 348 million bushels.*

## Farming in Canada

# Trend to Specialization

The Department of Agriculture is one of the oldest and largest departments of the Federal Government. Its main duties are: research into the physical and economic problems of agriculture; grading and inspection of farm products; prevention and control of diseases and pests of crops and livestock; conservation of soil and water resources; provision of farm credit; and alleviation of the effects of weather hazards and market fluctuations.

Important to the work of the Department are: the Canadian Wheat Board, now under jurisdiction of the Department of Trade and Commerce; the Agricultural Rehabilitation and Development Act (ARDA) (the responsibility for the administration was transferred in March 1964 from the Minister of Agriculture to the Minister of Forestry); the Maritime Marshland Rehabilitation Administration; the Feed Grain Storage Assistance Policy under jurisdiction of the Department of Forestry; and the Farm Improvement Loans Act for short-term or intermediate-term loans, administered by the Department of Finance.

The Minister of Agriculture is responsible for the administration of 32 principal Acts of Parliament and for the programming of five branches of his department—Research, Production and Marketing, Economics, Health of Animals, and Administration.

In 1964 Parliament authorized the Federal Government to offer re-insurance to provincial governments who participate in federal-provincial crop insurance schemes.

Among new legislation is the Farm Machinery Syndicates Credit Act, under which the Federal Government may, through the Farm Credit Corpora-

tion, lend a group of farmers up to 80 p.c. of the cost of machinery they wish to buy and operate jointly.

Earlier in the year, Parliament recognized the need for farmers to acquire larger farm enterprises to operate successfully under present-day conditions involving larger annual expenditures. The long-term farm-efficiency mortgage loans offered by Farm Credit Corporation were therefore expanded and made more flexible in amendments to the Farm Credit Act.

The ceiling for Farm Improvement Loans was also raised in 1964. These short-term, or intermediate-term loans are offered by chartered banks guaranteed by the Federal Government and supervised by the Department of Finance.

### *PFRA and Water Conservation*

Water conservation is undertaken by the Prairie Farm Rehabilitation Administration—now often working in concert with ARDA. Since its inception in 1935, PFRA has assisted in the building of more than 90,000 large and small water storages. About 1,160 small projects were handled in 1964 and work was continued on large reservoirs such as Mossy River, Conjuring Creek and Shellmouth, Man.; Avonlea Creek, Theodore Dam, Arborfield, and Plato Dam, Fairview, Sask.; Chain of Lakes, Alta.

Work was continued on the \$100 million multi-purpose South Saskatchewan River Dam which is rapidly nearing completion, and on the addition of the Waterton reservoir to the St. Mary Irrigation Project.

Irrigation farming is important in the Prairie provinces and research is constantly under way to develop the best use of lands and water. The department has established a pre-development farm near the South Saskatchewan River Dam to demonstrate good irrigation practices for farmers who will have water available for irrigation from the SSRD reservoir in the foreseeable future.

PFRA has helped prepare and operate more than two million acres of community pastures in the prairies. Twelve of these were completed recently.

### *Tree Seedlings for Shelter Belts*

In the spring of 1964, nearly nine million tree seedlings were shipped from PFRA's tree nurseries—enough for more than 2,000 miles of shelter belts. These shelter belts, added to trash cover left on cultivated land, and careful tillage, are important weapons in fighting the erosion of soil by wind and water.

The Research Branch continued to strengthen the hand of the farmer with improved plant varieties. Those recently issued for commercial use



*A workman busily constructing farm machinery reveals the close relationship between industry and agriculture.*



*Work on the South Saskatchewan River Dam began in 1959. The project will provide water for hydro electric power for one half million acres of agricultural land—and for recreation. This is a partially-completed section of the river diversion tunnel.*

include Cypress, a spring wheat resistant to stem sawfly; Park, a hard, red, spring, early-maturing wheat; Talbot, a new, soft, white winter wheat with greater resistance to lodging and rust than other varieties in the Ontario winter wheat-growing area; Sable, a new potato for the Maritimes; Quinte, Ranger, and Caravel, early apples for Eastern Canada. New varieties of forage crops and vegetables were also announced.

### *Incentive Programs Continued*

Research in livestock concerns crossbreeding for economical meat production, better feed utilization, prevention of sickness, and other factors.

The Production and Marketing Branch continued its incentive programs to promote the increase of purebred stock and high quality and quantity production. Grants were awarded to many groups concerned with raising the standard of Canadian agricultural production or improvement of farm and processing practices. Grading and inspection services were maintained and enlarged in co-operation with provincial authorities. The increase of air and ship transportation of agricultural products emphasized the importance of controls aimed at preventing the importation of new diseases and pests.

The Agricultural Stabilization Board offered price support on 17 products during the fiscal year ended March 31, 1964.

### *Farming More Commercialized*

Between 1951 and 1961, the number of census farms declined by 22.8 p.c. and the average size of farms increased markedly. Other indications of increasing size are the larger number of farms in the higher income classes and the pronounced rise in the value of capital invested in land, machinery and livestock.

Agriculture has become more commercialized during the past decade, due to technological improvements and the growing use of power equipment. A greater interdependence with the rest of the economy has resulted. Farmers today are using increased quantities of industrial products such as commercial fertilizers, weed killers and insecticides. Huge expenditures are made for fuel oil and other products needed to operate mechanized equipment.

Production of butter and hatching of baby chicks have practically all been transferred from farms to creameries and commercial hatcheries. Many farmers buy prepared feeds which contain farm-grown grains and additives derived from other industries. Technological advances in the biological and engineering fields have made possible the development of larger farms specializing in poultry, dairying, grain growing, potato growing, etc. For the most part, these farms are still owned and operated by individual farm operators.

In 1961, the occupied area of farms in Canada amounted to 173,000,000 acres of which 103,000,000 are improved. There were 481,000 farms and the capital invested in land, buildings, machinery and livestock amounted to \$13,200,000,000. Under the census definition of a farm—"a holding of one acre or more with sales of agricultural products during the past 12 months valued at \$50 or more"—many small holdings, which do not provide farm operators with their main source of income, are included; in fact, 127,600 farms reported sales of farm products of less than \$1,200. Most of these so-called farms are merely rural residences and the owners are employed in walks of life other than farming. The number of farmers therefore does not necessarily correspond to the number of farms; in June, 1964, there were 408,000 farm operators, 150,000 family workers and 114,000 paid workers in Canada.

Types of farming in Canada include dairying, cattle raising, general livestock, poultry raising, grain growing, fruit and vegetable production and specialties, such as tobacco and sugar beet farming. Many farms have combinations of these types.

In the Atlantic Provinces the agricultural land areas are relatively small and, except for Prince Edward Island where the proportion of cultivated land is high, only a small proportion is suitable for cultivation. The area of purely commercial farming in Newfoundland is quite small and chief activities centre around dairying and poultry raising. Crops like cabbage, potatoes and other root crops grow particularly well there. Mixed farming prevails on Prince Edward Island with major emphasis on potatoes, dairy products and hogs.

In Nova Scotia and New Brunswick, a little less than one fifth of the total land area is suitable for agriculture and little more than one quarter of the farm lands are improved. There are many part-time farmers with quite small holdings, but, in contrast, there are also well-developed large-scale enterprises. In Nova Scotia these large farms specialize in poultry raising and dairying; in New Brunswick, in potato growing.

*The furrowed patterns of agricultural lands emphasize the flatness of the interior plains of Canada.*





*As far as the eye can see—fields of New Brunswick potatoes. The province grew more potatoes in 1964 (approximately 11 million cwt.) than did any other province.*

Agriculture is diversified in the central region—Ontario and Quebec—yet there are also many specialty farms including dairying, poultry raising, tobacco and sugar beet raising, and fruit and vegetable production. Cash crops such as corn, soybeans and white beans are also important sources of income.

The chief characteristic of agriculture in the Prairie Provinces is the emphasis on grain production. Cattle and sheep ranching have long been established in southwestern Saskatchewan, southern Alberta and the foothills of Alberta, and sizable herds of cattle are to be found scattered through the grain-growing areas. Wheat, coarse grains and oilseed crops, however, dominate the production pattern on the majority of farms.

The mountainous topography of British Columbia limits farming to the coastal sections, the valleys and plateau regions of the interior and the Peace River block in the northeastern part of the province. The mild, maritime climate of the coast and the high concentration of urban population have led to the development of specialized dairy, poultry, small fruit and vegetable farming in this area. In the central interior, where the climate is more severe, there are several areas devoted to cattle and sheep ranching. In the Okanagan Valley, situated in the southern interior, fruit production predominates, particularly apple growing. In the Peace River block, agriculture has been limited to grain and forage seed production and stock raising.

### *Farm Income Higher*

The total production of agricultural products in Canada reached an all-time record high in 1963, nearly eight p.c. above the previous record established in 1962. For the most part, this gain can be attributed to a substantially larger wheat crop in Saskatchewan and Alberta. Also contributing to the higher total production were increases in the output of cattle, hogs, poultry, dairy products and fruits. Reduced production of potatoes, vegetables, calves and eggs offset these gains to some extent.

Cash receipts from farming reached a new high in 1963. These included cash income from the sale of farm products, Canadian Wheat Board payments on previous years' grain crops, net cash advances on farm-stored grains in Western Canada and deficiency payments made by the Agricultural Stabilization Board, totalled \$3,219,100,000, about two p.c. above the 1962 record high of \$3,154,200,000. Contributing most to the increase were higher cash receipts from the sale of wheat, coarse grains, tobacco, poultry and dairy products. Partially offsetting these increases were reduced returns from such important items as cattle, calves, hogs, flaxseed and Canadian Wheat Board payments.

In addition to the above income, farmers received, during 1963, nearly \$15,000,000 in the form of supplementary cheques paid out entirely under the provisions of the Prairie Farm Assistance Act. This contrasts with supplementary payments during 1962 of approximately \$70,000,000 which included not only payments under the Prairie Farm Assistance Act but also those made under the Western Grain Producers Acreage Payment Regulations.

Although farm sales of agricultural products were up in 1963, they did not account for the year's total production. Large quantities of grain from the record production on the Prairies were added to farm stocks accumulated from earlier years to await the export activities of 1964. Sales of feeder cattle to the United States in 1963 were more than 50 p.c. less than in 1962 with the result that larger numbers of cattle were being fed on farms at the end of 1963 than at the end of 1962. These additions to year-end farm-held inventories of both grains and livestock were valued at nearly \$307,000,000. These compare with total additions valued at \$188,000,000 for 1962.

Production of farm products not only contributes to sales and additions to inventories but also to farm-house consumption. The value of this produce consumed on farms, together with the imputed rental value of farm homes, amounted to \$356,500,000 in 1963, compared with \$345,800,000 a year earlier.

Farmers' outlays for the operation of their farms continued to rise in 1963. The most important increase in expenditure for any single item was recorded for fertilizer as a result of increased prices and the purchase of larger quantities with higher plant food content. A substantial gain in gross rents payable on tenant-operated properties reflects the larger crops harvested in Western Canada and the consequent rise in share-rent payments. Costs of machinery maintenance were well above the 1962 level largely because of increased purchases of repair parts.

### Net Income of Farmers from Farming Operations, 1961-63

(Thousands of dollars)

	1961	1962	1963
1. Cash income .....	2,951,862	3,154,240	3,219,102
2. Income in kind .....	339,793	345,778	356,543
3. Supplementary payments .....	35,766	70,313	14,769
4. Realized gross income (1+2+3) .....	3,327,421	3,570,331	3,590,414
5. Operating and depreciation charges .....	1,979,757	2,079,598	2,180,243
6. Realized net income (4-5) .....	1,347,664	1,490,733	1,410,171
7. Value of inventory changes .....	-272,992	188,039	306,813
8. Total gross income (4+7) .....	3,054,429	3,758,370	3,897,227
9. Total net income (8-5) .....	1,074,672	1,678,772	1,716,984



*Ontario is the leading producer of tobacco in Canada; Quebec is second. Recently, experimental plots were successfully cultivated in Prince Edward Island, Nova Scotia and New Brunswick.*

## Field Crops

Some 80,400,000 acres of improved land—four fifths of all the improved land in Canada—lie within the Prairie Provinces of Manitoba, Saskatchewan and Alberta and it is from this region that a vast outflow of grains and oilseeds originates. A large part of the harvest is surplus to Prairie requirements and is used not only in other parts of Canada but also for export.

The commodity produced in greatest abundance is wheat and, due to the combined influence of climatic conditions, plant-breeding programs and a most efficient grading system, Canadian high-protein wheat rates special significance in the milling industry throughout the world.

However, the semi-arid conditions of the Prairie region which make it possible to produce high-quality grains do have drawbacks. These are reflected in the marked year-to-year changes in output. For example, drought was a serious factor in 1961 when only 260,000,000 bu. of wheat were produced. This was followed by more normal growing conditions in 1962 with production at 538,000,000 bu. In 1963, growing conditions were exceptionally favourable and output set a new record of 703,000,000 bu. Such vast changes in production put a severe strain on the grain handling and marketing facilities as well as on farm incomes. Thus, much of the farm legislation pertaining to Western Canada is designed to alleviate the most serious consequences of such marked instability in output.

In addition, significant changes occur in the pattern of land use as producers attempt to adjust operations in response to market conditions. Thus, wheat acreage which totalled 26,500,000 acres in 1949 declined gradually to a low of 20,900,000 in 1957 and has since risen steadily to 29,000,000 acres in 1964.



*In the Niagara peninsula, Ontario, and in the Okanagan valley, British Columbia, grape growing is a major industry. Harvest season provides casual employment for many thousands of workers.*

In some cases year-to-year changes in acreages and yield combine to produce dramatic shifts in output. For example, the acreage seeded to Durum wheat more than doubled between 1960 and 1961 but the average yield per acre was less than half that of the preceding year because of drought and, as a result, output declined. In 1962 with the acreage almost doubled again, the average yield was more than double and production shot upwards from 14,500,000 bu. in 1961 to a record of 61,200,000 bu.

In other parts of Canada, field crop output tends to be tied more closely to the livestock economy with considerably more emphasis on hay, pasture and feed grains. However, feed grain production is usually insufficient to meet feeding requirements and considerable quantities are moved from the Prairie Provinces each season to help meet these needs.

Prince Edward Island and New Brunswick devote a considerable proportion of their improved land to potatoes and produce this commodity much in excess of home requirements, shipping the surplus to other provinces and, depending on market conditions, to the United States and other countries.

### *Principal Exporters of Rapeseed*

Oilseed crops, which years ago were mainly confined to flaxseed, have expanded to form a significant proportion of the field crops' output. Rapeseed, a crop born of wartime necessity, struggled through a number of difficult years following the war, but has since become firmly established as a valuable cash crop in northerly regions in the Prairie Provinces. Canada is now the principal world exporter of this commodity and the Winnipeg Grain Exchange is the only organization of its kind in the world to provide hedging and futures' trading facilities for this crop.

Sunflowers were introduced as a cash crop in World War II but, unlike rapeseed, production has remained relatively small. Mustard seed acreage

*Thousands of pounds of grapes are yearly turned into juice in modern processing plants.*



has also expanded in recent years. This crop which, for a number of years, was confined to southern Alberta has spread both to Saskatchewan and Manitoba. Soybean growing is confined chiefly to Ontario. Acreage sown to this crop increased rapidly during and after World War II but has been quite stable for the past decade.

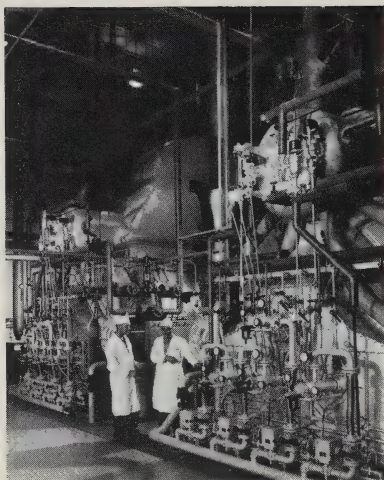
Although there are some 19 field crops for which annual estimates are made and which are produced over an extremely variable range of climatic, soil and farm organization conditions, wheat remains the major cash crop.

Canada's 1963-64 crop year exports for the five principal grains plus wheat flour in terms of grain totalled 673,300,000 bu., in contrast with the 1962-63 total of 382,900,000 and the ten-year average of 418,600,000. The 1963-64 shipments consisted of 539,600,000 bu. of wheat, 54,900,000 of wheat flour, in terms of wheat, 18,000,000 of oats, 41,500,000 of barley, 5,500,000 of rye and 13,600,000 of flaxseed. Clearances of bulk wheat, as reported by the Board of Grain Commissioners for Canada, amounted to 536,700,000 bu., surpassing by a wide margin the previous record high of 354,400,000 bu. set in 1928-29, 79 p.c. greater than the 300,100,000 exported in 1962-63 and more than double the ten-year average of 264,300,000.

Exports of Canadian oats were down from the previous year's total but were still well in excess of the relatively low shipments recorded during each of the four years preceding 1962-63. Exports of rye were also lower than in 1962-63. Barley exports were sharply greater than during the previous season while those of flaxseed recorded a moderate increase.

### *Wheat, the Major Cash Crop*

The increase of 236,600,000 bu. recorded in wheat shipments during 1963-64, compared with shipments made in 1962-63, primarily reflected the export of some 212,200,000 bu. to the U.S.S.R. as that country did not import any wheat from Canada during the previous year. Although wheat shipments to mainland China declined from 56,400,000 bu. in 1962-63 to 41,300,000 in 1963-64, increases were recorded over the same period to the following major markets, with quantities in millions of bushels, 1962-63 figures in brackets: Britain, 79.0 (77.5); Japan, 49.7 (44.1); Federal Republic of Germany, 37.3



*An increasing number of Canadian food processing plants are handling the high quality output of farms and fisheries.*

(28.0); Belgium-Luxembourg, 15.5 (10.0); Poland, 14.9 (14.2); Switzerland, 8.1 (3.0); Venezuela, 7.9 (6.7); the Philippines, 7.3 (6.7); and Czechoslovakia, 6.6 (4.4). These eleven markets accounted for 89 p.c. of the 1963-64 overseas clearances of wheat. In addition, shipments of Canadian wheat went to the following destinations in 1963-64, where none was recorded the previous year: Bulgaria, 7,600,000; Cuba, 7,500,000; Albania, 3,700,000; South Korea, 500,000; Portugal, 400,000; Burma, 79,000; and Panama, 78,000 bu.

### *Western Farmers and Wheat Board*

The Canadian Wheat Board, a Crown corporation in operation since August 14, 1935, is the general agency for all wheat, oats and barley produced in Western Canada and sold commercially for interprovincial or export movement. The farmer places these grains in annual marketing pools operated by the Board. He receives an initial payment at the time he delivers the grain at a country elevator or into a railway car and participates on the basis of his grain deliveries in any surplus the Board may subsequently realize on the sale of grain.

Through the provision of an initial price guaranteed by the Government of Canada, the Board stands as a buffer between the farmer and the constantly changing conditions of supply, demand and price under which wheat is produced. At the same time, the distribution of participation payments carried out from time to time steady the flow of farm income and spread it throughout the year.

The initial payment set by the Wheat Board in the 1962-63 crop year was \$1.50 per bu. basis No. 1 Northern in store Fort William-Port Arthur, or Vancouver. There were no adjustment or interim payments on the 1962-63 wheat pool, but on February 14, 1964, the final payment was announced. Producers delivered 469.9 million bu. of wheat to the 1962-63 pool, which included 44.4 million bu. of Durum wheat.

*Mechanical equipment aids an Alberta farmer in the harvesting of his crop. Combines are rapidly replacing threshing machines and grain binders.*



The amount of the final payment distributed to producers was a record \$199.7 million. Of this amount, \$28.7 million were distributed to producers of Durum wheat. After deducting the Prairie Farm Assistance Act levy, the average final payment on Spring wheat (other than Durum) was 40.181 cents per bu. and the average final payment on Durum grades of wheat was 64.780 cents per bu. The total payment for No. 1 Northern, basis in store Fort William-Port Arthur or Vancouver, and prior to deduction of the PFAA levy, amounted to \$1.87448 per bu.

### Estimated Area, Yield and Production of Principal Field Crops, 1963 and 1964

Crop	Area		Yield per Acre		Production	
	1963	1964	1963	1964 <sup>1</sup>	1963	1964 <sup>1</sup>
	acres	acres	bu.	bu.	bu.	bu.
All wheat.....	27,566,200	29,685,800	26.2	20.2	723,442,000	600,424,000
Winter wheat..	442,000	455,000	40.2	40.1	17,748,000	18,246,000
Spring wheat <sup>2</sup> ..	27,124,200	29,230,800	26.0	19.9	705,694,000	582,178,000
Oats for grain....	9,487,800	8,191,000	47.8	43.6	453,102,000	357,178,000
Barley.....	6,160,100	5,454,700	35.8	30.6	220,664,000	166,816,000
All rye.....	651,600	679,800	19.7	18.0	12,848,000	12,220,000
Fall rye.....	552,800	578,900	19.9	19.2	11,018,000	11,120,000
Spring rye.....	98,800	100,900	18.5	10.9	1,830,000	1,100,000
Mixed grains.....	1,411,300	1,431,300	48.2	46.4	67,987,000	66,395,000
Corn for grain....	552,500	660,000	65.5	80.2	36,184,000	52,965,000
Buckwheat.....	50,500	59,500	23.5	21.3	1,186,000	1,267,000
Peas, dry.....	54,100	70,500	19.7	22.5	1,064,000	1,585,000
Beans, dry.....	67,100	76,000	21.7	24.7	1,456,000	1,879,000
Flaxseed.....	1,682,400	1,916,500	12.6	9.8	21,116,000	18,855,000
Rapeseed.....	478,000	699,800	17.5	15.8	8,360,000	11,068,000
Soybeans.....	228,000	231,000	21.9	30.2	5,002,000	6,976,000
Potatoes.....	285,400	280,700	cwt. 160.5	cwt. 165.9	cwt. 45,809,000	cwt. 46,564,000
Mustard seed....	155,000	74,000	lb. 893	lb. 645	lb. 138,440,000	lb. 47,750,000
Sunflower seed...	38,000	82,500	lb. 948	lb. 482	lb. 36,038,000	lb. 39,750,000
Tame hay.....	12,352,000	12,507,000	tons 1.86	tons 1.71	tons 23,014,000	tons 21,365,000
Fodder corn.....	395,700	424,700	11.28	11.71	4,465,000	4,974,000
Field roots.....	26,100	24,900	10.54	11.81	275,000	294,000
Sugar beets.....	95,223	101,312	13.50	12.81	1,285,747	1,297,912

<sup>1</sup> As indicated on the basis of conditions on or about October 15, 1964.

<sup>2</sup> Includes relatively small quantities of winter wheat in all provinces except Ontario.

## Fruits and Vegetables

The processing industry plays an important part in the marketing of Canadian-grown fruits and vegetables. Over the years factories have been built in most of the important growing regions and considerable proportions of fruit crops and vegetables, particularly asparagus, beans, peas, corn and tomatoes, are canned, frozen or otherwise processed each season. Most of the vegetables for processing are grown under a system whereby the processor contracts annually with each grower for certain acreages.



*Scientists and farmers alike are interested in the collection of insects at the Experimental Farm, Ottawa.*

In recent years the importance of freezing has been increasing although the amount of produce processed in this way is still much smaller than the volume canned.

The most important fruit grown in Canada is the apple. Commercial apple orchards are found in Nova Scotia, New Brunswick, southern Quebec, much of Ontario and the interior of British Columbia, particularly in the Okanagan Valley. Tender tree fruits—pears, peaches, cherries, plums—are also grown in Ontario with the most important concentrations in the Niagara Peninsula and in Essex County. These same fruits as well as apricots are also grown on a large scale in the southern part of the Okanagan Valley in British Columbia.

In addition to tree fruits, strawberries and raspberries are cultivated on a commercial scale in the Maritimes, Quebec, Ontario and British Columbia. British Columbia fruit growers also produce loganberries on a commercial scale in the Lower Mainland and on Vancouver Island. Grapes, too, are grown quite extensively in the Niagara district of Ontario and on a smaller scale in British Columbia.

The native blueberry is found wild over large areas in Canada and is harvested in commercial quantities in the Atlantic Provinces, Quebec, and Ontario. A cultivated crop is grown in British Columbia.

Canada exports apples and blueberries. Most of the other fruit crops are usually below domestic requirements with imports making up the deficit. However, a considerable proportion of the fruits imported are brought in during the season when domestic supplies are off the market.

The total farm value of fruit crops grown in Canada in 1963 reached \$67,276,000. In the districts where these fruit crops are produced, sales make

up an important part of the agricultural income. The 1964 apple crop was estimated at 20,286,000 bu. compared with 23,016,000 bu. in 1963. The 1964 crops of pears, peaches, sour cherries, sweet cherries, apricots, strawberries, grapes and cranberries, on the other hand, were above those of 1963.

An estimated 244,020 acres were planted to commercial vegetable crops in Canada in 1964. The farm value of production amounted to \$64.0 million in 1963. The principal canning crops—beans, corn, peas and tomatoes—totalled 146,570 acres in 1964 compared with the previous year's 132,330 acres.

The production of field-grown vegetables in Canada is seasonal. During the winter when no domestic crops are being harvested, supplies of fresh vegetables are imported from the United States. At other times a very large proportion of the domestic requirements is met from Canadian output. Some exports from Canada to the United States are made particularly to large centres of population close to the border.

Some market garden acreages are found close to the larger centres of population throughout Canada. In such areas a wide variety of crops is produced to meet the needs of the local market. Land holdings are often small. There is also considerable production of vegetables in areas where soils and climatic conditions are particularly suitable to vegetable crops.

### Farm Values of Vegetables Produced, 1960-63

Vegetables	1960	1961	1962	1963 <sup>1</sup>
	\$'000	\$'000	\$'000	\$'000
Asparagus.....	1,297	1,321	1,389	1,307
Beans.....	2,066	2,415	3,106	3,610
Beets.....	1,092	1,153	1,293	1,095
Cabbage.....	2,517	2,620	2,478	3,044
Carrots.....	6,227	5,816	7,332	7,548
Cauliflower.....	1,560	1,340	1,666	1,959
Celery.....	1,119	1,103	1,266	1,188
Corn.....	5,704	6,432	6,871	5,935
Cucumbers.....	2,271	2,616	2,083	2,769
Lettuce.....	2,640	2,171	2,653	2,746
Onions.....	3,900	5,739	6,254	5,768
Parsnips.....	447	476	490	511
Peas.....	4,649	4,360	5,796	5,450
Spinach.....	635	523	486	447
Tomatoes.....	18,803	17,943	19,271	17,088
Turnips.....	2,981	2,813	3,571	3,582
<b>Totals.....</b>	<b>57,908</b>	<b>58,841</b>	<b>66,005</b>	<b>64,047</b>

<sup>1</sup> Subject to revision.

## Livestock

In 1961 cattle were reported on 78 p.c. of farms; pigs on 46 p.c.; and sheep on 8 p.c. The sale of cattle, hogs and sheep accounted for 30 p.c. of the cash income from farming operations in 1963. Livestock and dairy enterprises together yielded 47 p.c. of the farm cash income.

The number of cattle increased from 8,400,000 head in 1951 to 12,817,000 in 1964. All of this increase was in cattle raised for beef and most of the increase took place in the Prairie Provinces. Increasing emphasis on beef production, however, has been common to all regions. A considerable number of western cattle and calves are normally shipped to Ontario to be finished there for eastern markets. Feedlot operations throughout the prairie region

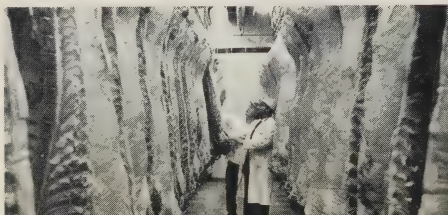
have expanded rapidly in recent years. Exports of live cattle and beef are principally to the United States. Feeder cattle and calves are the bulk of this export trade but a fairly steady quantity of dairy cattle move to milk-shed areas of the eastern United States. There is also a growing international demand for Canadian bloodlines of both beef and dairy breeds.

Hog raising is common to most farming areas of Canada but is most heavily concentrated in Ontario, Alberta and Quebec. Cyclical fluctuations in production are most marked in Saskatchewan and Manitoba. The estimated annual production of hogs has varied during the past decade from a low of 6,170,000 head in 1954 to a peak of 9,887,000 in 1959. The bacon, or meat-type, breeds of hogs predominate rather than those high in lard yield, and to stimulate careful breeding and selection for carcass improvement a quality premium of \$3 is paid to the producer for each Grade A hog marketed. The principal export market for pork, as for cattle and beef, is the United States and prevailing prices in Canada are generally very closely related to the structure of prices there.

The experience of many Canadian farmers and ranchers demonstrates that the income derived from wool and lamb crops makes sheep raising favourably competitive with other livestock production, yet sheep production continues to decline and imports of mutton and lamb exceed the national production of these meats. Carcass grading of lambs has recently been more extensively adopted and premiums are paid to the producer for each carcass that meets the defined standards. A policy of deficiency payments on wool is also in effect to stimulate quality production.

### Estimated Meat Production and Consumption, 1962 and 1963

Item	1962	1963	1962	1963
	BEEF		VEAL	
Animals slaughtered..... No.	2,503,600	2,653,600	990,100	1,053,600
Animals exported..... " "	455,686	243,261	36,550	35,308
Meat production..... '000 lb.	1,297,114	1,408,784	121,486	127,901
Total domestic disappearance..... " "	1,287,558	1,394,484	120,073	125,175
Per capita consumption..... lb.	69.3	73.8	6.5	6.6
	PORK		MUTTON AND LAMB	
Animals slaughtered..... No.	7,648,200	7,601,000	764,600	714,200
Animals exported..... " "	4,617	3,646	25,656	6,600
Meat production..... '000 lb.	978,211	978,252	32,648	31,209
Total domestic disappearance..... " "	925,418	958,692	71,325	75,186
Per capita consumption..... lb.	49.8	50.7	3.8	4.0
	OFFAL		CANNED MEAT	
Production..... '000 lb.	95,501	98,500	88,893	92,263
Total domestic disappearance..... " "	78,175	76,140	98,108	98,597
Per capita consumption..... lb.	4.2	4.0	5.3	5.2



*A government inspector grades carcasses in a Saskatchewan plant. Such constant vigilance ensures the high quality of Canadian beef.*

*Beef cattle production has greatly increased in Canada in the last decade, principally in the Prairie Provinces.*



*At June 1, 1964, sheep and lambs on Canadian farms totalled 1,286,500—a drop of almost five p.c. in Eastern Canada and 3 p.c. in the western provinces over the previous year's figures.*

## Dairying

Dairying is common to practically all farming areas in Canada with highly specialized production occurring in the milk sheds of the more densely populated sections. Ontario and Quebec each account for about one third of the milk cows in Canada and a corresponding share of the total milk production. In 1963 there were 2,914,000 milk cows on farms compared with 3,084,000 in 1953, excluding Newfoundland.

While the national dairy herd was approximately the same size as a decade ago, increasing specialization in milk production has occurred. The number of farmers reporting milk cows decreased from 455,000 to 309,000 between 1951 and 1961, but farm output of milk increased about 12 p.c. from 16 billion pounds in 1953 to 18 billion pounds in 1963. Selection, breeding and management practices have resulted in an average annual increase of approximately 2 p.c. per year in milk production per cow during this period. The principal dairy breeds are Holstein, Guernsey, Jersey and Ayrshire, but a considerable amount of total production is attributable to dual-purpose types.

Canadian farmers are selling a larger part of their total milk supply than they did a decade ago. Of the milk sold off farms in 1963, 62 p.c. was used for manufacturing purposes and 27 p.c. for the fluid market. This compares



*The rich red soil and emerald green fields of Prince Edward Island have earned the province the title, "Million Acre Farm".*

with 58 and 29 p.c., respectively, in 1953. Ten years ago, slightly more than 13 p.c. of the total milk supply was retained on farms compared with 11 p.c. in 1963. Milk delivered for the fluid milk market and manufacturing amounted to 16,400,000,000 pounds in 1963, 18 p.c. greater than similar sales in 1953.

### *Dairy Products Manufactured*

Creamery butter, cheddar cheese, evaporated milk and skim milk powder are the leading dairy products manufactured in Canada. Most of the cheddar cheese and a high proportion of the concentrated milk products are produced in Ontario and Quebec. Butter production is more widely distributed. The principal dairy products normally exported are cheddar cheese, evaporated milk, whole and skim milk powder, and casein, while imports consist entirely of special varieties of cheese.

Per capita consumption of milk and its products in whole milk equivalent was approximately 1,000 pounds per year from 1949 to 1957. It declined to 866 pounds in 1961 before moving up to 916 pounds in 1963. This upward movement was due to increased creamery butter consumption in response to a consumer subsidy, effective from May 1, 1962.

Total farm value of milk produced in 1963 was estimated at \$587,000,000. Of this amount, \$509,000,000—17 p.c. of total farm cash income from farming operations—was derived from the sale of milk, cream and farm butter.

### Dairy Production, by Economic Area, 1962-64

Economic Area and Year	Total Milk Production	Milk Used in Fluid Sales	Products Manufactured <sup>1</sup>			
			Butter		Cheddar Cheese	Ice Cream Mix
			Creamery	Farm		
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 gal.
Maritimes.....1962	999,864	374,361	16,745	788	1,411	1,598
1963	929,436	371,925	14,929	610	1,666	1,707
1964	943,383	370,350	15,183	469	2,233	1,839
Que. and Ont.....1962	12,637,159	3,378,799	245,965	1,352	112,566	13,659
1963	12,807,066	3,411,507	241,662	1,095	134,126	14,274
1964	12,895,198	3,485,447	243,205	884	136,873	15,087
Prairies.....1962	3,872,692	768,009	91,795	5,057	2,324	4,434
1963	3,854,311	781,199	90,289	4,205	2,586	4,919
1964	3,795,168	787,595	88,511	3,416	3,382	5,119
B.C.....1962	872,445	451,112	7,215	223	979	2,398
1963	841,169	457,244	5,039	192	989	2,576
1964	856,890	471,014	4,923	142	1,111	2,636
<b>Totals.....1962</b>	<b>18,382,160</b>	<b>4,972,281</b>	<b>361,720</b>	<b>7,420</b>	<b>117,280</b>	<b>22,089</b>
<b>1963</b>	<b>18,431,982</b>	<b>5,021,875</b>	<b>351,919</b>	<b>6,102</b>	<b>139,367</b>	<b>23,476</b>
<b>1964</b>	<b>18,490,639</b>	<b>5,114,406</b>	<b>351,822</b>	<b>4,911</b>	<b>143,599</b>	<b>24,681</b>

<sup>1</sup> Not included in this table are: whey butter, with a production of 3,952,000 pounds in 1962, 4,377,000 pounds in 1963 and 4,507,000 pounds in 1964; other cheese with 13,718,000 pounds, 15,620,000 pounds and 16,901,000 pounds, respectively; and concentrated milk products with 623,036,000 pounds and 643,434,000 pounds and 677,484,000 pounds, respectively.

## Poultry and Eggs

The rapid application of technological advancements in breeding, feeding and housing practices has made poultry products competitive with other foods for the consumer's dollar and has brought about intense competition within the industry itself. General farms have tended to lose interest in poultry but the more specialized operators have been spurred to greater production in order to maintain income. The proportion of farms keeping chickens declined from 69 p.c. to 55 p.c. between 1951 and 1961, but output of fowl and chicken meat almost doubled, egg production rose by almost 50 p.c. and turkey meat production almost quadrupled. Specialization has been most marked in the production of broiler weight chickens and turkeys.

The effect of climate has been largely eliminated. While production before specialization was characterized by wide seasonal fluctuation, there is now a reasonably steady supply of fresh eggs and poultry on the market in all seasons. The development of broiler and egg production has been especially accentuated near the large consumer outlets such as Toronto, Montreal, Winnipeg and Vancouver, and in districts such as the Annapolis Valley of Nova Scotia, the Moncton area in New Brunswick and south-western Ontario.

Eggs and poultry are marketed under rigid grade standards uniformly applied from coast to coast. The Canadian consumer has every confidence in the story the grade mark tells and the Federal Government inspection service lends confidence to inter-provincial and export trading of Canadian poultry products.

## Summary of Supply, Distribution and Consumption of Poultry Meat and Eggs in Canada, 1964

(Poultry meats on eviscerated weight basis)

Item	Total Meat	Fowl and Chicken	Turkey	Goose	Duck	Eggs
	'000 lb.					'000 doz.
Stocks at January 1.....	37,246	20,240	16,206	199	601	4,260
Production <sup>1</sup> .....	653,739	483,349	162,448	3,020	4,922	437,906
Imports.....	15,279	3,921	10,086 <sup>2</sup>	—	1,272	2,125
Total Supply.....	706,264	507,510	188,740	3,219	6,795	444,291
Exports.....	680	451	134	91	4	2,374
Stocks at December 31.....	40,857	18,651	21,522	151	533	6,840
Domestic disappearance.....	664,727	488,408	167,084	2,977	6,258	435,077
Less used for hatching.....	—	—	—	—	—	20,186
Domestic consumption.....	664,727	488,408	167,084	2,977	6,258	414,891
	pounds					dozen
Per capita consumption.....	34.5	25.3	8.7	0.15	0.32	21.5

<sup>1</sup> Production estimates do not include Newfoundland.

<sup>2</sup> Includes an estimate of 4,705,000 pounds eviscerated weight equivalent of live turkeys imported for processing in Canada.

*Output of fowl and chicken meat increased by 50 p.c. in Canada between 1954 and 1964. Specialization has been most marked in the production of broiler weight chickens and turkeys.*



*More turkeys are produced in Ontario than in any other province—nearly three million in 1964.*

## Furs

The early history of Canada was closely associated with the fur trade which strongly influenced exploration and settlement. While the value of wildlife pelts is still important to the economy, especially of more northerly and sparsely settled areas, it has been surpassed by the value of pelts taken from animals raised in captivity. Fur farming developed in Prince Edward Island and spread to other provinces in the late 1800's. It was based principally on the production of fox pelts, particularly the silver fox. At its peak in 1939 the output of fox pelts from over 7,000 farms reached almost 250,000 with a value of nearly \$4,000,000.

In the meantime, mink production on farms had been developing and by 1940 the value of mink pelts from some 3,300 farms exceeded \$2,000,000. The number of fox pelts produced declined rapidly during the postwar period and since 1957 has averaged less than 2,000 pelts per year with few farms continuing in production. Mink pelt production has, on the other hand, been growing quite steadily with increasing specialization. Fewer farms, only 1,475, produced over \$21,000,000 worth of mink pelts in 1963.

While mink has accounted for about 99 p.c. of the value of fur farm pelts in recent years, chinchilla raising is increasing and there is local interest in nutria production in some provinces. Other animals, such as fisher, marten, lynx and raccoon have been raised successfully on some fur farms, but the quantity of such pelts produced is very small.

Fur farms pay a nominal licence fee in most provinces and operate under supervision of provincial government departments. Research on breeding, feeding, housing and general care of fur-farm animals is conducted at a federal Experimental Farm at Summerside, P.E.I.

### Number and Value of Pelts Produced, by Kind, 1963-64

Kind	Number	Value	Average Value
		\$	\$
<b>Wildlife:</b>			
Squirrel.....	653,175	379,525	0.58
Muskrat.....	1,433,057	1,962,381	1.37
Beaver.....	463,837	6,181,030	13.33
Ermine (weasel).....	124,079	99,701	0.80
Rabbit.....	143,873	53,393	0.37
Mink.....	121,459	1,971,186	16.23
Fox—White.....	32,447	489,067	15.07
Other.....	19,680	86,524	4.40
Lynx.....	36,197	529,674	14.63
Marten.....	49,664	439,033	8.84
Raccoon.....	25,975	49,611	1.91
Other (badger, bear, coyote, fisher, otter, skunk, wildcat, wolf, wolverine).....	52,585	838,348	...
<b>Totals, Wildlife.....</b>	<b>3,156,028</b>	<b>13,079,473</b>	<b>...</b>
<b>Ranch-raised:</b>			
Chinchilla.....	12,308	172,748	14.04
Fox.....	837	10,462	12.50
Mink.....	1,390,139	21,989,675	15.82
Nutria.....	3,411	6,822	2.00
<b>Totals, Ranch-raised<sup>1</sup>.....</b>	<b>1,406,740</b>	<b>22,179,953</b>	<b>...</b>
<b>Grand Totals.....</b>	<b>4,562,768</b>	<b>35,259,426</b>	<b>...</b>

... Not applicable.

<sup>1</sup> Includes pelts not allocated by type.



*Bay de Verde is a quiet fishing village approximately 100 miles from St. John's. Though Newfoundland brought in the second largest quantity of fish of any province in 1962 (549,341,000 pounds) British Columbia was first, Nova Scotia second, and Newfoundland third in income derived from the fisheries.*

### Fishing Industry

## An Historic Source of Revenue

The fishing industry contributes some \$250,000,000 yearly to Canada's wealth and gives employment to approximately 80,000 fishermen and 15,000 plant workers. Workers in other industries also make a living by building and equipping the plants, or manufacturing the boats, nets, gear and refrigerated trucks needed to catch, process, pack and ship the fish.

Even as it comes from the water, and before it is processed or packed, the catch is worth approximately \$125,000,000 per year to the fishermen. In several areas it supplies an important proportion of the people's income. This is particularly true in the Atlantic Provinces and British Columbia where a big catch is taken from the sea, and on many remote northern lakes where people may have little other opportunity for making a living.

Furthermore, since Canadians catch much more fish than they need for food and sell about 70 p.c. of it to other nations, it earns a significant amount of foreign currency.

### *Will Grow in Importance*

Fisheries are expected to grow in importance because of increasing world population. In 1830 there were one billion people; in 1930, two billion; in 1963, three billion. By the end of the present century, at this rate, there will be seven billion. How are all these people to be fed? Many experts do not

think that new land can be brought under cultivation fast enough. Even if it could, there might not be enough tillable land to meet expected needs. Seventy per cent of the earth is covered with oceans, and it might be there that we can find enough food for the future.

At present about a dozen countries in the world, including Canada, each catch a million tons or more yearly. Some countries, notably Peru, with the biggest catch of all, use so much of the fish for animal feed or fertilizer that they are not important producers of food fish; while half a dozen others, China, for example, have such large populations that they eat all the fish they catch. Indeed, the United States and the United Kingdom not only use up their own big supplies but also are the world's biggest fish importers. This leaves only Japan, Canada and Norway with food-fish surpluses large enough to play a major part as fish exporters.

Of the 80,000 fishermen in Canada, approximately 60,000 are in the sea fisheries and 20,000 in the lake fisheries. In most years they catch over a million tons of fish. There are between four and five hundred fish plants, most of them on the coast. They include freezing, salting, smoking, pickling and canning plants. Those in British Columbia tend to be very large and few in number. Those on the Atlantic are more numerous and many are small. What is believed to be the biggest plant in the world for processing freshwater fish is on Lake Erie not far from Windsor but it is small compared with many of the coastal operations.

The plants, with their complicated machinery, represent the biggest investment. But there are also 50,000 boats of all sizes, 2,500,000 lobster traps and approximately 100,000,000 yards of fishnet, besides piers and wharves for the boats and scows, tank and refrigerator trucks, bombardiers, snowmobiles and aircraft specially equipped for holding and transporting fish.

Some 90 p.c. of the \$250 million output of Canadian fish plants comes from sea fish, the remaining 10 p.c. from freshwater fish. Two thirds of the sea fish, or about 60 p.c. of the total value, is produced in the Atlantic Provinces; the remaining one third of the sea fish, or about 30 p.c. of the total, in British Columbia. More than half of the freshwater fish is taken in the Great Lakes, the big Manitoba lakes, or Great Slave Lake; but the total catch from hundreds of smaller lakes in the north country increases every year as new road and air transportation makes it possible to bring the fish to market.

*Indian workers find employment in the fishing industry at Buffalo Narrows, Saskatchewan. Inland fisheries are important to the land-locked province, one of the largest producers of whitefish and lake trout in Canada.*



## *Atlantic Fisheries in Four Sectors*

Canada's Atlantic fisheries can be divided into four sectors. The mighty *groundfishery* is by far the largest. Its products, which include cod fillets, halibut steaks, salt cod and many other items, account for well over half the total value of the entire output of Canada's Atlantic fishing industry. Second is the *lobster* fishery which accounts for nearly a quarter, the two fisheries between them making up three quarters of the total. Third in importance is the *herring* fishery and the fourth sector, made up of a dozen or more small fisheries, may be called "*miscellaneous*".

Cod makes up most of the groundfish catch but haddock, flounders, redfish, pollock, halibut, hake and other similar fish which live on the sea bottom are also included. Offshore these fish are scooped up by dragging a huge cone-shaped net along the ocean floor. Inshore, large quantities of cod are caught in stationary fish traps. Most rapid expansion in recent years has been in production of cod fillets frozen together in large slabs. These solid slabs of fish, shipped in refrigerated cars or trucks, are the raw material of the fishstick industry, which has grown very fast in the United States and now uses most of the groundfish slabs produced in Canada.

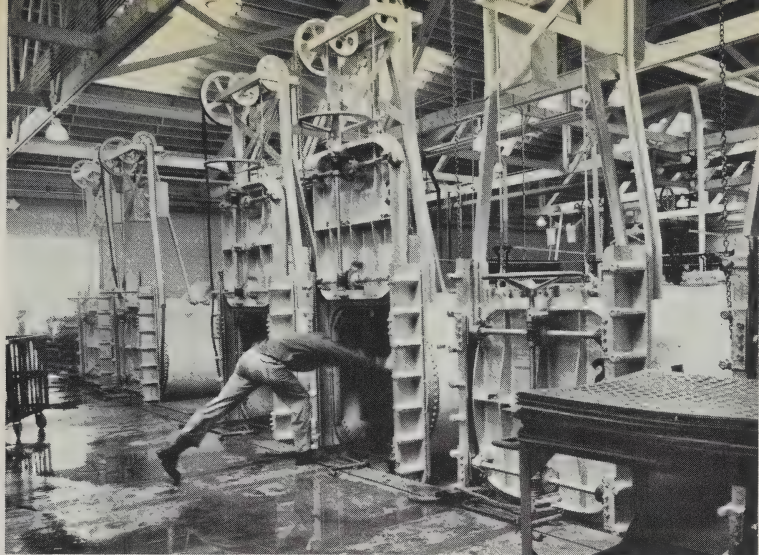
The biggest fish plant in the Atlantic Provinces opened in Lunenburg, June 1964. It handles mainly frozen groundfish fillets. Other new plants at Canso, Nova Scotia, and at Montague and Summerside, Prince Edward Island, recently started production. Newfoundland's output of groundfish fillets also has increased very quickly in recent years and is still growing.

Tiny herring are canned as sardines, supporting a large, prosperous industry in southern New Brunswick. Adult herring are pickled or smoked in dozens of plants scattered along the Atlantic coast. The smoking plants make bloaters, kippers and smoked boneless herring.

Fastest-growing among miscellaneous industries is production of frozen shucked scallops and frozen whole swordfish. In 1963 Atlantic fishermen found a new method of catching swordfish which was so successful that they caught more than they could sell and the per-pound price dropped so low that it was

*A fisherman weights a lobster trap off the coast of Prince Edward Island. The lobster fishery annually brings to the Maritimes more than \$18 million in revenue.*





*A worker loads one of the huge pressure cookers at a Steveston, British Columbia cannery. Salmon accounts for two thirds of the value of the products of B.C. fish plants.*

no longer profitable to fish. One of the important developments of 1964 was their success in organizing this fishery in proper relation to market demand. They took a smaller catch, sold it at good prices, earned 25 p.c. more than in 1963, and now have a newly-developed fishery on a sound basis.

### *Pacific Coast Fisheries*

On the Pacific coast, Canada has three very large and three small fisheries. The most important is salmon, which accounts for two thirds of the value of all products of British Columbia fish plants. Herring and halibut account for about one quarter. The remaining one twelfth of the total is produced by the shellfishery, the new tuna industry and trawler fishery.

Salmon are taken by gillnet, seine or troll. A gillnet, with floats at the top and weights at the bottom, hangs from the surface of the water like a curtain across the path of migrating salmon when they come from the ocean into fresh water to spawn. A seine is a similar net paid out around a school of fish and then "pursed"; gathered up under them so they cannot escape by dividing but are crowded together into a small area, from which they are scooped into the boat. A troll boat drags a number of baited hooks through the water, hooking the fish as sportsmen do but on a multiple scale.

More salmon is canned in British Columbia than is required by the Canadian market. Most of it goes to Great Britain, but other Commonwealth countries also take considerable quantities, as does Western Europe. Frozen whole salmon and salmon steaks are sold all over North America.

Pacific halibut have been scarce lately, especially in areas of the Behring Sea, and fishing, already carefully supervised by Canadian and American governments, may have to be cut still further to preserve the present stock of fish. Most of the catch is sold fresh or frozen to buyers in North America. Since 1960 halibut has been increasingly popular in England.

Pacific herring are caught in seines. Very little is used for human consumption. Fish meal is mixed with other nourishing ingredients to make feed for

farm animals and pets. Herring oil is also used in the manufacture of shortening, margarine, paints, oilcloth, ink and machine oil.

Shellfish caught in British Columbia are: crabs, oysters, clams and shrimps. A high percentage of tuna is imported from Japan and canned by Canadian salmon firms in their off-season. The trawler fishery is similar to the Atlantic groundfishery but is a much smaller operation.

Biggest contributing factor in the prosperity of Pacific fisheries in 1964-65 is the excellent potential of the export market for canned salmon. The Japanese, the biggest suppliers, had a smaller pack than was expected in 1964. The Americans, who usually put up a big pack in Alaska, also found salmon scarce. But the British Columbia salmon runs were larger than either the biologists or the fishermen expected and cannery warehouses on the Canadian west coast were well filled when importing countries began to place their orders.

The halibut market, which in 1963 had been at a low price level, also improved in 1964. The herring industry was disrupted by a month-long strike during the fall fishery and did not show as good results as in 1963, but there was a strong demand for herring oil and production was close to the record level of the previous year.

Whitefish, pickerel and pickerel fillets are the most important products of the lake fisheries. They are sold mainly in the United States. There was a slight decline in this industry due to a consignment of whitefish produced in the United States which caused food poisoning there in the fall of 1963. Consumer purchases of whitefish decreased for several months. The market came back strongly in February 1964, however, and now is normal.

### Quantity and Value of Landings of the Chief Commercial Fish 1961-63

Kind of Fish	1961		1962		1963	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000 lb.	\$'000	'000 lb.	\$'000	'000 lb.	\$'000
<b>Atlantic Coast</b> .....	...	<b>59,004</b>	...	<b>68,373</b>	<b>1,425,298</b>	<b>76,608</b>
Cod.....	516,861	15,646	585,386	18,904	609,722	20,998
Haddock.....	118,395	4,647	115,021	4,869	90,911	4,916
Halibut.....	6,143	1,668	6,104	1,776	4,926	1,604
Herring and sardines..	193,369	2,756	246,502	3,430	252,702	3,086
Lobsters.....	47,547	18,054	46,452	19,781	44,373	21,281
Mackerel.....	14,118	694	16,167	653	17,200	706
Redfish.....	56,216	1,458	61,114	1,585	83,274	2,221
Salmon.....	3,466	1,417	3,776	1,752	4,052	1,833
Swordfish.....	3,196	1,238	3,495	1,580	14,458	2,975
Other <sup>1</sup> .....	271,237	11,426	270,233	14,043	303,680	16,988
<b>Pacific Coast</b> .....	...	<b>39,666</b>	...	<b>49,854</b>	...	<b>40,466</b>
Halibut.....	29,503	6,204	34,575	10,912	37,274	8,249
Herring.....	448,433	4,589	445,275	4,752	572,202	6,477
Salmon.....	121,634	26,152	163,907	30,559	119,324	22,790
Other <sup>1</sup> .....	40,532	2,721	43,672	3,631	44,059	2,950
<b>Inland</b> .....	...	<b>12,450</b>	...	<b>13,345</b>	...	<b>13,302</b>
Pickarel (blue).....	2	1	—	—	—	—
Pickarel (yellow).....	13,346	2,455	14,959	3,226	16,115	3,713
Whitefish.....	27,184	3,814	26,578	3,817	25,279	3,389
Other.....	82,541	6,180	95,494	6,302	82,453	6,200
<b>Totals</b> .....	...	<b>111,120</b>	...	<b>131,572</b>	...	<b>130,376</b>

<sup>1</sup> Quantity includes fish, shellfish and livers only. Value includes all items.



*Drilling a round at Cominco's Sullivan mine, British Columbia.*

## Mining in 1964

# Record Value of Production

In 1964, the Canadian mineral industry's estimated value of production rose 11 p.c. to a record \$3,397,000,000 from the previous peak of \$3,050,400,000 established in 1963.

The high rate of advance, compared with advances ranging from 4 p.c. to 8 p.c. during the previous five years, was the result of several factors. These included the first full year's production from several major mining projects, the start of production from other large undertakings, the buoyant economies of the world's industrial nations, generally rising metal prices, and the strong competitive position of Canadian minerals and metals in most market areas.

The importance of mining to Canada's economy may be illustrated in many ways. Its gross value of output leads all primary resource industries and is exceeded only by manufactures and construction. The value of mineral exports in the crude and semi-fabricated stages constitutes over 25 p.c. of the total value of all commodity exports and amounted, in 1964, to an estimated \$2,100,000,000. Measured by the indexes of industrial production, its rate of growth is second only to electric power and gas and far outstrips the indexes of total industrial production and of manufacturing. The average indexes of these four sectors for the first 10 months, with 1949=100, were: electric power and gas, 395.1; mining, 319.2; total industrial production, 211.3 and manufacturing, 187.4.

## *Provides Indirect Employment*

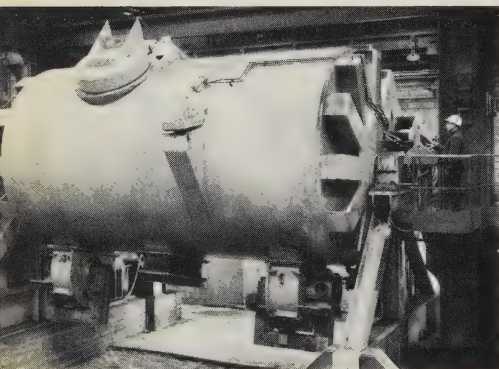
Although mechanization and automation have reduced opportunities for much higher direct employment, the benefits of greater production have been apparent in many other facets of Canada's economy. The industry provides indirect employment for large numbers of people engaged in a wide variety of manufacturing, transportation, construction, service and other occupations.

Output of metallic minerals in 1964 was valued at \$1,704,000,000, 12.9 p.c. above that of 1963. Shipments of industrial minerals, which include non-metallic and structural materials, were worth \$687,300,000 compared with \$632,600,000 the previous year, and mineral fuels production increased in value to \$1,005,200,000 from \$908,400,000. This was the first year that mineral fuels were valued at over \$1,000,000,000.

In 1950 the entire mineral industry reached a total value of output of \$1,000,000,000 and, in that year, the mineral fuels were valued at only \$200,000,000. The index of physical volume of mineral production rose to 320 in 1964 (1949=100) from 294 in 1963 and the per capita value of mineral production increased to about \$177 from \$161. The leading mineral commodities in value of output were: crude petroleum, \$674,000,000; iron ore, \$403,000,000; nickel, \$382,000,000; copper, \$328,000,000; zinc, \$193,000,000; natural gas, \$183,000,000; and asbestos, \$148,000,000. It was the first year that Canada ranked highest in world mine production of zinc.

## *Leading Mineral-Producing Provinces*

Ontario remained Canada's leading mineral-producing province with output valued at \$911,100,000, 26.8 p.c. of Canada's total output. It was followed by Alberta with 22.0 p.c. of total output; Quebec with 19.8 p.c.; Saskatchewan 8.2; British Columbia 7.9; and Newfoundland with 5.6 p.c. Ontario's percentage of Canada's total mineral production has been declining steadily during the past few years. In 1964, Quebec and Newfoundland registered strong absolute and percentage gains from the previous year while output from British Columbia, Saskatchewan and Manitoba registered minor percentage losses even though the value of output of each of the provinces increased.



*In 1964 the world's largest induction furnace was put into operation by the Quebec Iron and Titanium Co., at Sorel, Que., where ilmenite ore is processed to produce titania slag and pig iron (Sorelmetal).*



*Drums of powdered columbium oxide concentrate await shipment at the plant of St. Lawrence Columbium and Metals Corporation, Oka, Que. Columbium is valued for its resistance to corrosion and is combined to form stainless steel and many valuable alloys. The United States is the chief purchaser.*

Expansion and diversification of mineral production occurred in all producing provinces. In British Columbia the year was highlighted by expansion of the non-ferrous metals' industry with output of copper, most of which was exported to Japan as concentrates, coming from several new operations; the announcement of plans by large companies to develop molybdenite properties for 1965 production; and increased output of lead and zinc. In the Prairie Provinces output of petroleum, natural gas, and sulphur recovered from the latter, continued to rise; potash deposits of Saskatchewan were being prepared for additional production and output of some 4,000,000 to 5,000,000 tons a year is envisaged in 1966-67. First trial shipments of lead-zinc ore from the large high-grade Pine Point deposits in the Northwest Territories were made via the recently completed 430-mile railway to Grimshaw, Alberta, and thence to Kimberley, B.C., for treatment.

The large, good-grade zinc-copper-silver discovery near Timmins, Ontario, made by Texas Gulf Sulphur Company was probably the outstanding mineral development in Ontario during 1964. Quebec's mineral industry continued to expand and set new production records. Its iron ore, copper, asbestos, and lead-zinc outputs were at all-time highs. The Mattagami-area mines completed their first full year's production, new copper mines began production and the facilities at the Valleyfield zinc refinery, which began operations in 1963, will be expanded.



*Initial development in the zinc-copper-silver property of the Texas Gulf Sulphur Co., in the Timmins area, Ontario.*

Plans announced by Brunswick Mining and Smelting Company to expand operations in the Bathurst area of New Brunswick and to build a large \$117,000,000 complex embracing chemical, fertilizer, steel and base metal facilities will provide the province with a strong base from which further industries will develop. It will be a giant step towards the industrial development of New Brunswick. Production of industrial minerals in Nova Scotia continued a steady year-to-year growth with gypsum, salt and barite being the leading minerals in value of output. Newfoundland also continued to make mineral production gains with iron ore, copper, lead and zinc being produced in record quantities.

## **Metallic Minerals**

Metallic mineral production in 1964 was valued at \$1,704,000,000 compared with \$1,509,000,000 in 1963. Iron ore replaced nickel for the first time as Canada's leading metallic mineral. The increase in metallics' output was spread over a number of commodities with the largest advances being made in iron ore, zinc, copper and nickel. Output of silver, lead and gold were about the same as in 1963; uranium shipments declined.

Canadian **iron ore** producers set a new record with shipments at 38,600,000 short tons being more than 8,000,000 tons above the previous record of 1963. The main factor responsible for the increase was the record steel production in the United States, Canada's largest customer for iron ore.

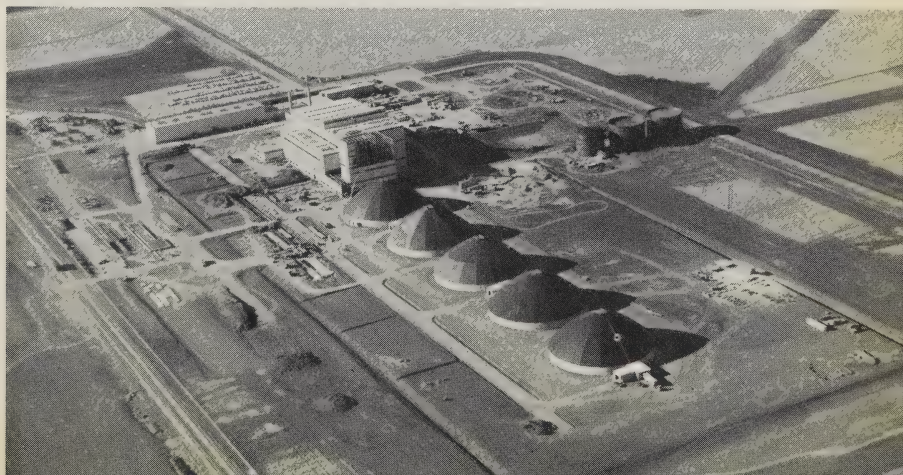
Two new producers of high-grade ore—the Adams Mine (pellets) near Kirkland Lake, Ontario, and Wabush Mines (concentrates) in Labrador—reached the tune-up stage near the end of the year. Still undergoing construction at the year end was Arnaud Pellets' plant at Pointe Noire, Quebec. Also under construction, for expected completion in 1965, is the pellet plant of Caland Ore Company in the Steep Rock area of Ontario.

**Nickel** production in 1964, at 232,875 short tons valued at \$382,000,000 was only slightly above 1963. During the course of the year, the production curtailments that had been established in 1962 and 1963 by The International Nickel Company of Canada, Limited (INCO) and Falconbridge Nickel Mines, Limited were withdrawn because of the substantially increased demand for nickel, particularly in the United States. INCO commenced the development of a new mine, the Birchtree, near Thompson, Manitoba, with production planned for 1968. Falconbridge continued the development of its Strathcona mine, for initial production in 1967.

Mine production of **copper** at 494,017 tons set a new record in 1964. The voluntary production curtailments, made by major producers in Canada and other countries in 1962 and continued throughout 1963, were suspended during 1964. The supply-demand balance, which had been maintained by means of world production and marketing curtailments, was upset by a high level of industrial activity, the threat of work stoppages at major United States producers, and increased purchasing to cover rise in consumption and to replenish inventories.

Of major importance was the spectacular discovery of large high-grade zinc-copper-silver deposits by Texas Gulf Sulphur Company, near Timmins, Ontario. The company prepared immediate plans for large-scale production. In British Columbia, a start was made on a mine access road and tunnel to the copper deposit of Granduc Mines, Limited, following eight years of exploration.

*The Canadian potash industry is concentrated in southern Saskatchewan. Kalium Chemicals Ltd. (above) recovers potash by solution mining, the first plant to use this process. It taps the sylvite beds more than 5,000 feet below the surface.*



## *Canadian Zinc Establishes World Record*

Canadian mine output of **zinc** reached a record 682,000 tons in 1964, to make Canada the world's largest mine producer of this mineral. The increase resulted mainly from the first full year of production from the new mines in the Mattagami area of Quebec and from the production of a large new mine in the Bathurst area of New Brunswick. Refined zinc tonnage also increased in 1964 due largely to the first full year of production at the new zinc refinery near Valleyfield, Quebec.

Mine output of **lead** amounted to 200,000 tons in 1964. World lead mine production increased slightly and refined lead production increased moderately in 1964. Lead consumption, however, increased by 7 p.c. and, despite releases from United States government stockpiles, supplies of lead fell short of requirements.

The number of operating lode **gold** mines continued to diminish with the result that Canada's gold production at 3,810,000 ounces, valued at \$143,855,000, declined to its lowest level since 1948, the year the Emergency Gold Mining Assistance Act was introduced. Two long-producing lode gold mines closed in 1964 and a number of other long-producing mines are due to close shortly because of exhaustion of ore reserves.

Deliveries of **uranium oxide** to the United States, the United Kingdom and to the Canadian government stockpile, in 1964, amounted to 6,914 tons valued at \$85,000,000 compared with 8,352 tons worth \$137,000,000 in 1963.



*A herd of reindeer in the Mackenzie Delta, north of the Arctic Circle, is undisturbed by a geophysical observer who is reading a gravity meter, during an evaluation of potential petroleum resources of the region.*



*The International Nickel plant, Thompson, Manitoba is a \$200 million capital investment. It is the only completely-integrated nickel mining development—mining, concentrating, smelting and refining—in the world.*

The short-term stockpile program, instituted by the Federal Government in 1963, ended on June 30, 1964. At the end of 1964, only three Canadian uranium mines remained in operation—Denison and Rio Algom (Nordic) mines in the Elliot Lake area of Ontario and the Beaverlodge area mine of Eldorado Mining and Refining, Limited, Saskatchewan. In addition, Stanrock Uranium Mines in the Elliot Lake area is completing its part of the United Kingdom contract by recovering uranium oxide by bacterial leaching.

Canadian **silver** production in 1964 amounted to 31,112,000 ounces, slightly over 1,000,000 ounces greater than in 1963. The increase was due principally to increased production of silver from base metal mines, some of which witnessed their first full year of production and four of which commenced initial operations during the year. Canada is now the world's fourth largest mine producer of silver, after Mexico, Peru and the United States.

Production of **platinum metals** in 1964 amounted to 374,988 ounces, valued at \$25,196,159. This was slightly higher than 1963 production because of increased production of nickel from which platinum metals are recovered as by-products. **Cobalt** production, also recovered in large part as a by-product of nickel mining increased in 1964 to 3,196,000 pounds valued at \$6,484,000.

**Molybdenum** shipments continued to increase markedly, attaining, in 1964, a record of 1,300,000 pounds valued at \$1,800,000. Significant developments on the Canadian scene included two new molybdenum mines in British Columbia, one on Boss Mountain and one near Endako. Both mines will come into production in 1965. **Columbium** (niobium) production from Canada's only producer, in the Oka area of Quebec, was 2,250,000 pounds of  $\text{Cb}_2\text{O}_5$  contained in concentrates—a substantial increase from 1963. Canada's only **tungsten** mine, in the Yukon Territory, reopened in July, after a year of closure due to depressed conditions in the tungsten market. Primary **aluminum** output increased in 1964 to an estimated 835,000 tons and annual productive capacity increased to 913,000 short tons. Although Canada is the second largest producer of primary aluminum in the world, it is unique in that 85 p.c. of its production is exported.

## Industrial Minerals

Industrial minerals set a production value record for the seventh consecutive year with output of non-metallics and structural materials both registering new highs. The largest contributor was the **asbestos** industry which shipped crude and milled fibres worth \$148,000,000. Quebec contributed about 80 p.c. of the asbestos production with British Columbia, Newfoundland and Ontario following in that order. **Potash** shipments from Saskatchewan were worth nearly \$31,000,000, up from \$22,500,000 in 1963. Shipments of elemental **sulphur**, recovered from the processing of natural gas, increased to 1,600,000 tons from 1,200,000 tons and output of titanium dioxide, salt, gypsum, nepheline syenite and several other industrial minerals were also higher.

Production of **structural materials** (cement, sand and gravel, stone, clay products and lime) kept pace with activity in home building, industrial construction and road and railway projects. Most cement plants operated at, or near, capacity to produce 7,700,000 tons valued at \$133,000,000. Sand and gravel output was worth \$124,000,000 and that of stone \$83,600,000.

**Asbestos** shipments in 1964 at 1,377,000 tons of fibre valued at \$148,370,000 established a record for the fifth successive year. However, estimated production indicates that the USSR, for the first time, may have moved ahead of Canada as the world's leading producer of asbestos. During the year an important corporate change took place in Canada when Asbestos Corporation Ltd. acquired the assets of Johnson's Co. Ltd. and Johnson's Asbestos Company in the Eastern Townships of Quebec. Asbestos Corporation also acquired the asbestos deposit of Murray Mining Corporation near the west side of Ungava Bay in far northern Quebec.

World **potash** demand increased in 1964 at a higher rate than in past years and exceeded production. In North America, supplies were barely sufficient to serve domestic and some export demand. Had it not been for full production and an increase in capacity at the Esterhazy, Saskatchewan, plant of International Minerals and Chemical Corporation (Canada) Limited shortages would have occurred in North America and would have been even more serious in overseas markets. Potash production in Saskatchewan was 862,000 tons valued at \$30,700,000 compared with 626,860 tons worth \$22,500,000 in 1963. Kalium Chemicals Limited commenced production of potash by a solution-mining method in September and shipped limited amounts. Several other companies were developing their potash lease holdings in Saskatchewan for production in 1965 and succeeding years.

Canada continued as one of the world's largest producers of elemental **sulphur** with 1964 production, nearly all recovered from processing sour natural gas, amounting to 1,600,000 tons valued at \$15,400,000, an increase of 15.2 p.c. from the value of production in 1963. In addition, the value of sulphur contained in smelter gases and of pyrites amounted to \$4,500,000 and \$1,100,000, respectively. Elemental sulphur recovery capacity at year end in 17 plants was 2,100,000 tons a year. This will increase to 2,500,000 tons in 1965 upon completion of three new plants and the expansion of one plant. The shipments of titanium dioxide slags and other titanium products were valued at \$21,000,000.

## Mineral Fuels

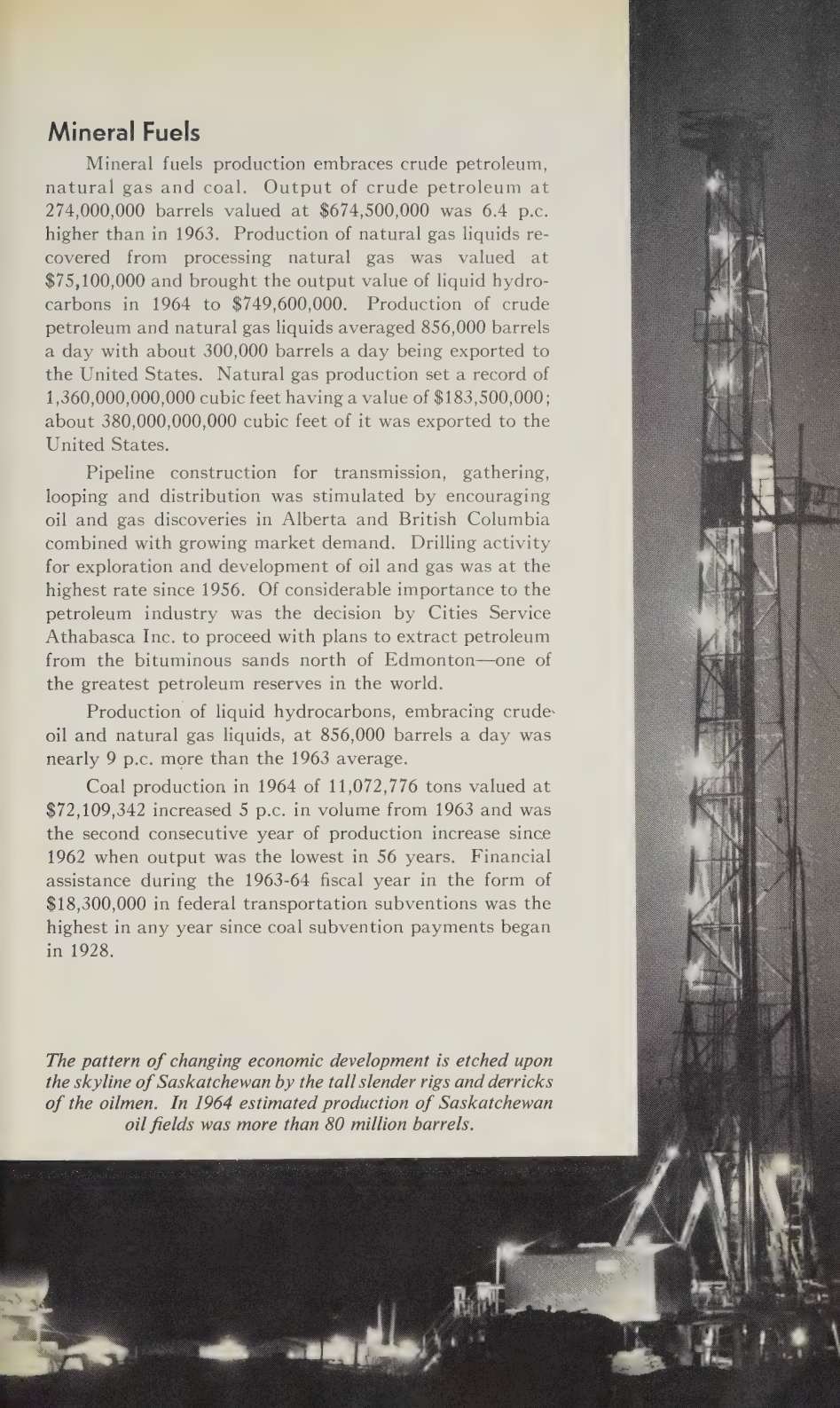
Mineral fuels production embraces crude petroleum, natural gas and coal. Output of crude petroleum at 274,000,000 barrels valued at \$674,500,000 was 6.4 p.c. higher than in 1963. Production of natural gas liquids recovered from processing natural gas was valued at \$75,100,000 and brought the output value of liquid hydrocarbons in 1964 to \$749,600,000. Production of crude petroleum and natural gas liquids averaged 856,000 barrels a day with about 300,000 barrels a day being exported to the United States. Natural gas production set a record of 1,360,000,000,000 cubic feet having a value of \$183,500,000; about 380,000,000,000 cubic feet of it was exported to the United States.

Pipeline construction for transmission, gathering, looping and distribution was stimulated by encouraging oil and gas discoveries in Alberta and British Columbia combined with growing market demand. Drilling activity for exploration and development of oil and gas was at the highest rate since 1956. Of considerable importance to the petroleum industry was the decision by Cities Service Athabasca Inc. to proceed with plans to extract petroleum from the bituminous sands north of Edmonton—one of the greatest petroleum reserves in the world.

Production of liquid hydrocarbons, embracing crude oil and natural gas liquids, at 856,000 barrels a day was nearly 9 p.c. more than the 1963 average.

Coal production in 1964 of 11,072,776 tons valued at \$72,109,342 increased 5 p.c. in volume from 1963 and was the second consecutive year of production increase since 1962 when output was the lowest in 56 years. Financial assistance during the 1963-64 fiscal year in the form of \$18,300,000 in federal transportation subventions was the highest in any year since coal subvention payments began in 1928.

*The pattern of changing economic development is etched upon the skyline of Saskatchewan by the tall slender rigs and derricks of the oilmen. In 1964 estimated production of Saskatchewan oil fields was more than 80 million barrels.*



## Canada's Mineral Production, by Type and per Capita Value, 1950 and 1955-64

Year	Metallic Minerals	Industrial Minerals	Fuels	Total	Per Capita Value
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$
1950.....	617	227	201	1,045	76.24
1955.....	1,008	373	414	1,795	114.37
1956.....	1,146	420	519	2,085	129.65
1957.....	1,159	466	565	2,190	131.87
1958.....	1,130	460	511	2,101	122.99
1959.....	1,371	502	536	2,409	137.79
1960.....	1,407	520	566	2,493	139.48
1961.....	1,387	542	653	2,582	141.59
1962.....	1,496	574	781	2,851	153.53
1963.....	1,510	632	908	3,050	161.48
1964 <sup>1</sup> .....	1,705	687	1,005	3,397	176.64

<sup>1</sup> Preliminary.

## Exports of Mineral-Based Products in Relation to Total Trade, 1962 and 1963

	1962		1963	
	\$'000,000	p.c.	\$'000,000	p.c.
Raw material.....	992.1	16.0	1,042.7	15.3
Semi-processed.....	943.4	15.3	971.4	14.3
<b>Totals.....</b>	<b>1,935.5</b>	<b>31.3</b>	<b>2,014.1</b>	<b>29.6</b>
<b>Total exports of all products.....</b>	<b>6,178.6</b>	<b>100.0</b>	<b>6,798.5</b>	<b>100.0</b>

## Value of Mineral Production of Canada, by Classes, 1955-1964

Year	Metallics	Non-metallics	Mineral Fuels	Structural Materials	Total
	\$	\$	\$	\$	\$
1955.....	1,007,839,501	144,920,841	414,318,015	228,232,439	1,795,310,796
1956.....	1,146,349,595	160,341,599	518,761,191	259,453,169	2,084,905,554
1957.....	1,159,579,226	169,061,110	564,776,791	296,905,265	2,190,322,392
1958.....	1,130,160,395	150,354,802	510,768,681	309,455,160	2,100,739,038
1959.....	1,370,648,535	178,216,641	535,577,823	324,577,512	2,409,020,511
1960.....	1,406,558,061	197,505,783	565,851,829	322,594,308	2,492,509,981
1961.....	1,387,159,036	210,467,786	653,327,802	331,345,763	2,582,300,387
1962.....	1,496,433,950	217,453,009	780,932,387	356,166,833	2,850,986,179
1963.....	1,509,536,931	253,452,413	908,428,087	379,011,116	3,050,428,547
1964.....	1,704,622,877	286,900,692	1,005,190,049	400,441,081	3,397,154,699

## Mineral Production of Canada, by Provinces, 1962-1964

Province	1962		1963		1964	
	Value	Per cent	Value	Per cent	Value	Per cent
	\$		\$		\$	
Newfoundland.....	101,858,960	3.6	137,796,707	4.5	191,922,042	5.6
Prince Edward Island.....	677,906	0.1	798,345	0.1	843,115	0.1
Nova Scotia.....	61,651,093	2.1	66,317,617	2.2	66,952,434	2.0
New Brunswick.....	21,811,575	0.8	28,343,419	0.9	49,856,301	1.5
Quebec.....	519,453,166	18.1	540,615,068	17.7	671,881,571	19.8
Ontario.....	913,342,174	32.1	873,828,297	28.6	911,098,372	26.8
Manitoba.....	158,932,169	5.6	169,638,539	5.6	175,041,740	5.2
Saskatchewan.....	240,653,502	8.3	272,355,007	8.9	279,995,723	8.2
Alberta.....	566,502,703	19.9	669,311,368	21.9	747,348,396	22.0
British Columbia.....	235,428,135	8.3	261,146,081	8.6	269,293,797	7.9
Yukon.....	13,137,730	0.5	14,366,936	0.5	15,210,744	0.4
Northwest Territories.....	17,537,066	0.6	15,911,163	0.5	17,710,464	0.5
<b>Totals.....</b>	<b>2,850,986,179</b>	<b>100.0</b>	<b>3,050,428,547</b>	<b>100.0</b>	<b>3,397,154,699</b>	<b>100.0</b>

# Mineral Production of Canada, by Kinds, 1963 and 1964

Mineral	Unit of Measure	1963		1964	
		Quantity	Value	Quantity	Value
			\$		\$
Antimony.....	lb.	1,601,253	624,489	1,718,634	866,200
Bismuth.....	lb.	359,125	704,103	387,213	839,725
Cadmium.....	lb.	2,475,485	5,941,164	2,800,761	8,950,213
Calcium.....	lb.	98,673	117,247	158,875	174,762
Cobalt.....	lb.	3,024,965	6,122,169	3,196,322	6,484,255
Columbium (Cb <sub>2</sub> O <sub>3</sub> ).....	lb.	1,393,444	1,300,009	2,250,000	2,305,000
Copper.....	lb.	905,117,779	284,403,710	988,033,963	328,233,604
Gold.....	oz. t.	4,003,127	151,118,045	3,810,738	143,855,362
Iron ore.....	ton	30,143,649	313,182,963	38,664,583	402,892,490
Iron, remelt.....	ton	...	9,246,713	...	15,954,893
Lead.....	lb.	402,329,071	44,256,199	400,770,432	53,863,546
Magnesium.....	lb.	17,810,348	5,357,816	18,041,900	5,592,989
Mercury.....	lb.	...	...	5,548	22,192
Molybdenum.....	lb.	833,867	1,344,404	1,278,404	1,789,234
Nickel.....	lb.	434,059,725	360,392,658	465,749,775	381,996,719
Platinum, group.....	oz. t.	357,651	22,585,205	374,988	25,196,159
Selenium.....	lb.	468,772	2,273,545	448,750	2,213,182
Silver.....	oz. t.	29,932,003	41,425,891	31,111,943	43,556,719
Tellurium.....	lb.	76,842	499,473	79,789	508,830
Thorium.....	lb.	...	...	...	...
Tin.....	lb.	927,062	648,943	356,074	623,128
Tungsten (WO <sub>3</sub> ).....	lb.	...	...	...	...
Uranium (U <sub>3</sub> O <sub>8</sub> ).....	lb.	16,703,066	136,909,119	13,828,369	85,418,271
Zinc.....	lb.	947,444,960	121,083,466	1,364,048,909	193,285,404
<b>Total metallics.....</b>		<b>...</b>	<b>1,509,536,931</b>	<b>...</b>	<b>1,704,622,877</b>
Arsenious oxide.....	lb.	187,450	7,498	300,000	12,000
Asbestos.....	ton	1,275,530	136,956,180	1,377,079	148,370,312
Barite.....	ton	173,503	1,693,119	172,415	1,692,400
Diatomite.....	ton	798	26,830	584	20,360
Feldspar.....	ton	8,608	197,031	8,615	205,420
Fluorspar.....	ton	...	1,976,006	...	2,291,626
Gem stones.....	lb.	16,000	15,529	...	15,000
Graphite.....	ton	...	...	13	6,570
Grindstone.....	ton	10	2,000	10	2,000
Gypsum.....	ton	5,955,266	11,237,952	6,373,765	12,397,828
Iron oxides.....	ton	978	74,505	914	79,015
Lithia.....	lb.	644,354	682,029	1,049,783	1,152,000
Magnesitic-dolomite and brucite.....	...	...	3,439,890	...	3,467,029
Mica.....	lb.	1,183,041	44,284	1,202,800	95,583
Nepheline syenite.....	ton	254,000	2,699,202	292,042	3,397,106
Peat moss.....	ton	243,311	8,680,228	245,117	7,177,608
Potash, (K <sub>2</sub> O).....	ton	626,860	22,500,000	862,440	30,660,000
Pozzolan.....	ton	...	17,994	...	20,000
Pyrite, pyrrhotite.....	ton	476,438	1,643,629	356,349	1,128,019
Quartz.....	ton	1,836,612	3,687,979	2,130,837	4,602,864
Salt.....	ton	3,721,994	22,316,565	3,892,636	23,075,518
Soapstone and talc*.....	ton	54,250	757,878	57,150	819,154
Sodium sulphate.....	ton	256,914	4,121,114	330,178	5,328,220
Sulphur, in smelter gas.....	ton	353,243	3,488,181	434,776	4,493,182
Sulphur, elemental.....	ton	1,249,887	13,380,182	1,611,181	15,409,943
Titanium dioxide, etc.....	ton	...	13,806,608	...	20,981,935
<b>Total non-metallics.....</b>		<b>...</b>	<b>253,452,413</b>	<b>...</b>	<b>286,900,692</b>
Coal.....	ton	10,575,694	71,756,581	11,072,776	72,109,342
Natural gas.....	Mcf.	1,117,425,217	150,468,714	1,363,814,214	183,505,880
Nat. gas by-products.....	bbl.	...	70,997,795	...	75,096,676
Petroleum, crude.....	bbl.	257,661,777	615,204,997	274,250,125	674,478,151
<b>Total fuels.....</b>		<b>...</b>	<b>908,428,087</b>	<b>...</b>	<b>1,005,190,049</b>
Clay products.....	...	...	38,154,294	...	40,534,768
Cement.....	ton	7,013,662	118,614,929	7,744,516	133,087,366
Lime.....	ton	1,450,731	18,504,220	1,490,922	19,122,104
Sand and gravel.....	ton	189,570,503	123,854,254	189,374,681	124,049,509
Stone.....	ton	62,655,329	79,883,419	63,630,849	83,647,334
<b>Total structural materials.....</b>		<b>...</b>	<b>379,011,116</b>	<b>...</b>	<b>400,441,081</b>
<b>Grand Total.....</b>		<b>...</b>	<b>3,050,428,547</b>	<b>...</b>	<b>3,397,154,699</b>

.. figures not available.  
— nil or zero.

... figures not appropriate or not applicable.  
\*Includes pyrophyllite



## Forestry

# First Among Industries in Exports and Total Capital Invested

Canada's forests, which extend in an unbroken belt 600 to 1,300 miles wide from the Atlantic to the Pacific, are one of Canada's greatest renewable resources.

There are approximately 150 kinds of trees native to Canada of which about one-fifth are softwoods. Of these, spruce, Douglas fir, hemlock, cedar, pine, balsam fir, yellow birch, maple and poplar provide most of Canada's lumber. Spruce, balsam fir, jack pine, hemlock and poplar are the principal species used in the manufacture of pulp and paper. British Columbia accounts for some 37 p.c. of Canada's cut of timber followed by Quebec, with 28 p.c., and Ontario, with 16 p.c.

Productive forests—those capable of producing usable timber—cover nearly 1,000,000 square miles. About 82 p.c. of this forest land is publicly owned and administered by the ten provincial governments which make the forest crop available to the forest industries through a variety of systems. The remaining 18 p.c. is made up of farm woodlots, forest land owned by companies and by individuals, and areas for which the Federal Government is responsible.

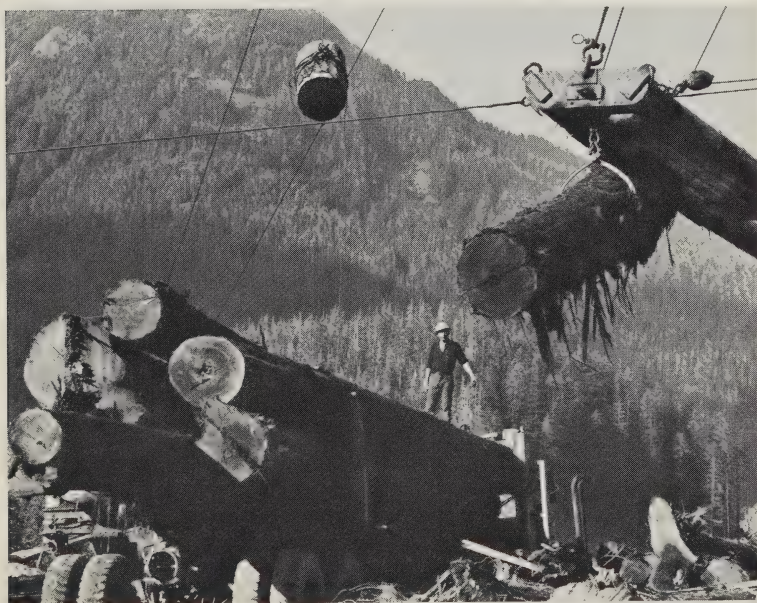
Average annual utilization of some 3,200,000,000 cubic feet, together with losses, is still much less than the annual growth of the forests. Nevertheless, the drain is increasing, and has prompted governments and industry alike to plan for greater production.

Over the past few years, the standards of utilization of Canada's forests have been much improved. Today, a greater amount of pulp and paper can be produced from one cord of wood than ever before. Alcohol, vanillin, tanning liquor, road binders and turpentine are made from what were formerly waste materials in the production of pulp. The development of new pulping processes and the manufacture of products such as fibreboard, particleboard and laminated wood products are permitting the harvesting of formerly unused woods and the more complete utilization of wood harvested.

## The Department of Forestry

The importance of the forest industries to the nation was recognized by the creation of a separate Department of Forestry in 1960.

The new Department is responsible for the carrying out of forest surveys on federally-administered lands and assisting Federal Government agencies with forest management matters. It also provides public information and education on the protection and wise use of the nation's forests. It maintains regional laboratories, field stations and experimental areas on federal lands and carries out extensive basic and applied research. Since 1962 nearly \$8,000,000 have been made available annually to the provinces under a "single package" agreement, replacing three former agreements.



*A huge logging truck is unloaded at a lumber camp in British Columbia. The province has an annual cut of more than one million cubic feet.*

## ARDA

In March 1964, responsibility for the administration of the Agricultural Rehabilitation and Development Act of 1961 was transferred, by Order-in-Council, from the Minister of Agriculture to the Minister of Forestry. Responsibility for the administration of the Maritime Marshland Rehabilitation Act and the program respecting freight assistance and storage costs on western feed grains was also transferred to the Minister of Forestry.

The Agricultural Rehabilitation and Development Act is enabling legislation. It permits the Federal Government to contribute financial aid and provide research in implementing federal-provincial rural development programs. The ARDA program is intended to assist rural areas in resource development and use, in the creation of income and employment opportunities. The ARDA legislation provides for the involvement of community organizations in social and economic planning, thus tying "self-help" programs to the broader programs of provincial and federal governments.

Four general areas of activity are provided for in the Act and in the General Agreement, which was signed in 1962 between each province and the Federal Government—soil and water conservation, alternate land use, rural community development, and research. The term "community development" embraces a concept of resource development, industrial development and stimulation of regional economies according to comprehensive plans worked out between the community organizations and the senior governments.

The ARDA program was fully operating early in 1963 with the establishment of numerous federal-provincial projects, the majority concerning alternate land use and soil and water conservation. The initiative for proposing all projects, except those in the field of research, rests with the provinces. By the end of 1964, nearly 700 projects had been proposed. The total financial commitment was close to \$60,000,000 of which the Federal Government contributes approximately half.

The largest of the ARDA research programs currently under way is the Canada Land Inventory, a program to classify lands in the settled portions of Canada according to their capability for use in agriculture, forestry, wildlife and recreation, thus providing a guide for programs of land use adjustment.

## Forest Industries

The forests are the source of over 30 p.c. of all Canadian exports. Forest industries consist of woods' operations, the lumber industry, the pulp and paper industry and the wood-using and paper-using groups of industries. The latter use partially manufactured wood, pulp or paper, as their raw materials.

**Logging.** Because of the rugged terrain, the large size of the trees, and the nature of integrated operations, logging in the far west coastal areas has long been highly mechanized. This has been the case more rarely in eastern operations where smaller trees with their generally lower individual values make highly-developed mechanization economically difficult. In 1962 a group of companies formed the Logging Research Associates to pool their resources in an effort to achieve substantial and rapid progress in the field of wood extraction.



*A forester studies a humidity gauge to determine if the woods are too dry for logging operations. Humidity sticks are weighed daily on such scales.*

The output of Canada's forests in 1962 amounted to 3,431,802,000 cubic feet of solid wood, with products valued at \$887,814,000. This includes logs, bolts, pulpwood, fuelwood, poles, railway ties, and other primary products. Minor products include Christmas trees and miscellaneous roundwood products. Almost 96 p.c. of the industrial wood cut in 1962 was processed to some degree in Canada.

With regard to volume of production of primary wood products, in 1962 logs and bolts were the most important products in Canada as a whole and in British Columbia, Alberta, Saskatchewan, Nova Scotia, the Yukon, and the Northwest Territories in particular. Pulpwood was most important in all other provinces except Prince Edward Island where fuelwood took the lead.

**Lumber.** The lumber industry is particularly dependent upon the general economic condition of the country and on the state of foreign markets. The effects of fluctuating demand are more noticeable in British Columbia than



*A jackladder and log boom are shown at Terrace Bay, Ontario. The forest industry of Canada employs more than 300,000 persons and pays out more than a billion dollars annually in salaries and wages.*

elsewhere in Canada because of the dependence of that province on the lumber industry. The provisional figure for Canadian lumber production for 1963 stands at 9,277,244,000 ft.b.m., an increase of about 5.0 p.c. over the 1962 figure of 8,829,380,000 ft.b.m. Of the 1962 total, British Columbia accounted for 68 p.c., the Prairie Provinces and the Yukon and Northwest Territories for 5.0 p.c., Ontario for 7.4 p.c., Quebec for 13.2 p.c., and the Atlantic Provinces for 6.4 p.c. These respective percentages have not changed substantially from those for the previous year.

Canadian sawmills vary greatly in size and product. A few, located in coastal British Columbia, are capable of cutting up to half a million board feet of lumber in a single shift. Others are small enterprises, often only turning out five or six thousand feet a day. Spruce is the leading species, both in volume and value. Douglas fir is second, followed in volume produced by hemlock, cedar, balsam fir, white pine, jack pine, yellow birch, and maple.

The lumber industry proper employed 42,938 employees who earned \$161,888,000 in salaries and wages in 1962. Shipments amounted to 7,786,982,000 ft.b.m. of lumber with a gross value of \$522,704,000. Exports amounted to 5,446,472,000 ft.b.m. valued at \$394,491,000.

**Pulp and Paper.** The manufacture of pulp and paper has been Canada's leading industry for many years. It stands first among all industries in

value of production, exports, total wages paid, and total capital invested. It is the largest consumer of electrical power and largest buyer of goods and services in the land. The industry has a newsprint capacity of more than three times that of any other country and provides nearly 50 p.c. of the world's newsprint needs. Canada stands second only to Sweden as the world's largest pulp exporter and second to the United States as the largest pulp producer. The largest individual pulp and paper mill in the world is located in Canada.

The industry includes several forms of industrial activity: logging operations, manufacture of various kinds of pulps and papers, and manufacture of a variety of paperboard products. In 1962 there were 29 mills making pulp only, 24 were making paper only and 72 were making pulp and paper. Some of the latter are completely integrated establishments conducting all operations from cutting to the final production of newsprint, wrapping paper, fine paper, tissue paper, paperboard and other wood fibre and cellulose products. Over 74 p.c. of the wood pulp manufactured was converted to other products in Canada; the remainder was shipped abroad. Newsprint accounted for about 75 p.c. of all paper products manufactured and over 93 p.c. of all paper products exported in 1962. Canadian production of paper, paperboard, and building board in 1962 was 8,879,000 tons. Quebec's share of this figure was 43 p.c., Ontario's was 29 p.c., British Columbia's was about 14 p.c., and that of the remaining provinces was 14 p.c.

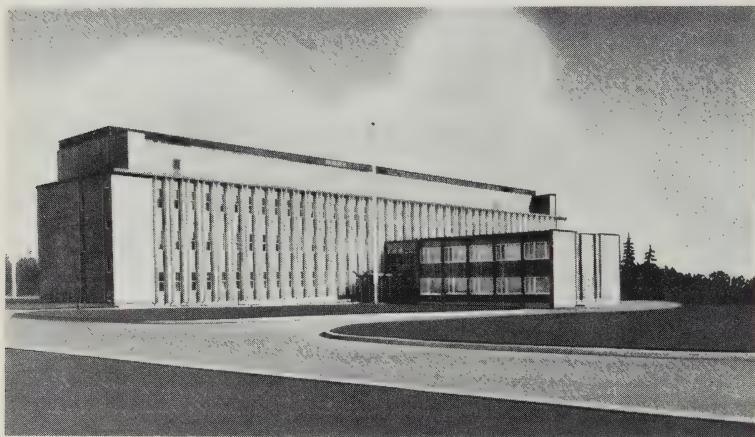
### Principal Statistics of the Pulp and Paper Industry, 1940, 1960, 1961 and 1962

Item	1940	1960	1961	1962
Establishments..... No.	103	128	125	125
Employees.....	34,719	65,642	65,799	64,885
Salaries and wages..... \$'000	56,074	344,410	355,171	355,245
Gross value of factory shipments..... "	298,035	1,578,727	1,632,834	1,716,300
Value added by manufacture..... "	158,231	811,547	840,647	880,260
Pulp shipped..... '000 tons	..	..	..	3,690
.. \$'000	..	..	..	436,920
Paper shipped..... '000 tons	..	..	..	8,661
.. \$'000	..	..	..	1,190,498
Pulp exported..... '000 tons	1,069	2,600	2,867	3,044
.. \$'000	60,930	325,122	346,662	369,902
Newsprint exported..... '000 tons	3,243	6,190	6,254	6,148
.. \$'000	151,360	757,930	761,313	753,060

Continuous fundamental and applied research into woodland and pulp and paper mill operations is carried out by the Pulp and Paper Research Institute of Canada, which also, in co-operation with McGill University, trains postgraduate students in fields of interest to the pulp and paper industry.

**Wood-Using Industries.** This group includes the industries, other than the sawmills and the pulp and paper industry, that use wood as their principal raw material: shingle mills, the veneer and plywood mills, sash, door and planing mills, wooden box factories, etc. Most of these industries obtain from the sawmills the wood that they transform into planed and matched lumber, flooring, doors, windows, laminated structures, prefabricated buildings, boxes, barrels, caskets, woodenware, etc.

In 1962 these industries employed 40,530 persons (39,848 in 1961) and paid out \$150,094,000 (\$142,910,000 in 1961) in salaries and wages. The gross selling value of their products was \$542,233,000 (\$500,238,000 in 1961). Of this amount the sash, door and planing mill industry accounted for \$245,371,000 (\$236,130,000 in 1961) and the veneer and plywood industry for \$166,043,000 (\$143,719,000 in 1961).



*The new Forest Research Laboratory at Victoria, British Columbia, opened on February 15, 1965. It houses insect and disease research facilities as well as the unit established to pursue other forest research. It also serves as administrative headquarters for the Federal department's forestry activities in British Columbia.*

### Area Classification 1963

Forest Land	Thousands of Acres		
	Merchant-able	Young Growth	Total
Productive Forest			
Softwood.....	202,987	142,312	345,299
Mixedwood.....	86,879	57,505	144,384
Hardwood.....	32,373	41,138	73,511
Sub-total.....	322,239	240,955	563,194
Unclassified <sup>1</sup> .....			56,291
Total.....			619,485
Non-productive Forest.....			475,419
<b>Total Forest.....</b>			<b>1,094,904</b>
<b>Non-forest Land.....</b>			<b>1,183,648</b>
<b>Total Land.....</b>			<b>2,278,552</b>
<b>Water.....</b>			<b>186,606</b>
<b>Total Area of Canada.....</b>			<b>2,465,158</b>

<sup>1</sup> Productive forest land not yet restocked.

## Forest Fire Statistics

Item	Average Annual 1952-61	Year 1962
<b>Areas Burned</b>	000's of Acres	
Merchantable timber.....	574	299
Young growth.....	569	155
Cut-over lands.....	339	139
Non-forested lands.....	1,246	271
<b>Total</b> .....	<b>2,728</b>	<b>864</b>
<b>Merchantable Timber Burned</b>	000's of Cubic Feet	
Large material.....	279,998	8,200
Smaller material.....	255,050	117,332
<b>Total</b> .....	<b>535,048</b>	<b>125,532</b>
<b>Estimated Values Destroyed</b>	000's of Dollars	
On forested areas*.....	12,582	6,464
Other property.....	791	514

\*Wood values are based on prevailing stumpage rates only; damage to soil, site quality, stream-flow regulation, wildlife, recreational and similar values are not included.

Fire by Causes	1961		1962	
	No.	%	No.	%
Recreation.....	1,561	18.0	1,675	26.7
Settlement.....	1,047	12.1	604	9.6
Woods operations.....	161	1.9	289	4.6
Other industrial operations.....	330	3.8	95	1.5
Railroads.....	318	3.7	217	3.5
Public projects.....	129	1.5	88	1.4
Incendiary.....	354	4.1	231	3.7
Miscellaneous known.....	1,321	15.3	1,185	18.8
Lightning.....	2,901	33.5	1,622	25.8
Unknown.....	533	6.1	279	4.4
<b>Total</b> .....	<b>8,655</b>	<b>100.0</b>	<b>6,285</b>	<b>100.0</b>
<b>Cost of Protection</b>			\$000's	
Cost of fire fighting 1962.....				4,264
Other fire control costs 1961.....				26,207

**Paper-Using Industries.** These include the asphalt roofing manufacturers, the paper box and bag manufacturers and other paper converters. Included in this group are establishments that use synthetic materials, metal foil, etc., to produce articles similar to those manufactured of paper and paperboard.

In 1962 this group comprised 455 establishments (442 in 1961), employed 35,825 persons (34,462 in 1961) and distributed \$164,833,000 in salaries and wages (\$153,295,000 in 1961). The gross value of factory shipments was up to the record value of \$617,278,000 (\$570,683,000 in 1961).



*In Quebec the construction program on the Manicouagan and Outardes Rivers will add 628,000 kilowatts of new capacity in 1965 and will eventually boost hydro development on these two rivers to a total of almost six million kilowatts.*

### Electric Power

## Trend to Thermal Development

Canada's rich heritage of energy resources is found in many forms—falling water, wood, coal, petroleum, natural gas and radioactive ores. The abundance of these resources and the manner in which they have been developed has carried Canada to the fore as one of the major industrialized nations of the world.

Because water power is renewable and is, consequently, one of the most permanent of the country's natural resources, it will continue to play an important part in satisfying electric energy requirements.

By the beginning of 1965, the total capacity installed in hydro-electric plants in Canada exceeded 20,300,000 kw. Approximately three quarters of this capacity is in the industrially-important St. Lawrence River-Great Lakes region in Quebec and Ontario. These two provinces, together with British Columbia, are richest in water power resources and in the amount of installed hydro-electric generating capacity.

Until recently, sites from which Canada's water power requirements were derived were situated close to demand centres, the limiting factor in development being very largely the economics of transmission. However, advances in long distance power transmission techniques led power engineers to consider sites previously considered remote. Several are now producing power and several others are under development.

A marked trend to thermal development became apparent in the 1950's as fewer hydro sites within economic transmission distance of demand centres remained. Also, the benefits derived from integrated hydro-thermal power systems have contributed significantly to increasing emphasis on thermal power production. Fifty-three p.c. of the total generating capacity installed in 1964 was thermal. The total of 918,000 kilowatts of thermal capacity scheduled for 1965 will be more than twice the thermal capacity installed in 1964.

The use of nuclear fuels for the production of electric power has been the subject of research for a number of years and, in 1962, the country's first nuclear-electric power became available at the Chalk River Nuclear Power Demonstration Station in Ontario. In 1966, Canada's first full-scale nuclear-electric station, on the shore of Lake Huron, Ontario, is scheduled to go on line and plans have been announced for an even larger station, near Fairport on the shore of Lake Ontario.

Recognizing the benefit inherent in the economic transmission of energy over long distances, the Government of Canada is co-operating with provincial authorities in carrying out studies aimed at making more effective use of Canada's water resources and seeking answers to the problems involved in establishing a national power grid.

## Atlantic Provinces

Of the four Atlantic Provinces, Newfoundland alone relies almost entirely on water power for its electrical energy. In 1964, an announcement by the provincial government of a start on development of the 459,000-kw. generating station on the Salmon River at Bay d'Espoir will see even greater reliance on hydro-electric energy. When completed, the Salmon River station will double the existing hydro-electric generating capacity in the province, and will serve much of the island portion of the province through a 230-kv. east-west transmission grid now under construction. Of greater potential benefit to the province, however, is the mighty Hamilton River in Labrador, where the development of two sites on the main stem would yield several million kilowatts of hydro capacity.

Prince Edward Island has little hydro-electric potential and depends for its electrical supply almost exclusively upon thermal power. Most of the latter is generated at the 52,500-kw. Charlottetown thermal station and at the 6,890-kw. Summerside plant.

In Nova Scotia, ample supplies of local coal are available to fuel thermal plants, largest of which are the stations at Halifax, Glace Bay, Trenton and Sydney, with a combined installation of 334,100 kw. A significant increase in the province's thermal installation will occur in 1965 when a 100,000-kw. steam unit is brought into service at Tufts Cove on Halifax harbour. The

single-unit will be the first of a multi-unit complex which could eventually reach 500,000 kw. Although it depends largely upon power from thermal sources, Nova Scotia has developed hydro-electric power in substantial amounts and consideration is being given to construction of several new plants in the near future.

In New Brunswick, the electrical energy generated in the province is supplied in about equal amounts from thermal and hydro sources and the current program of power development includes both thermal and hydro facilities. In the hydro-electric field, a total of 34,600 kw. of new capacity will begin initial service in 1965 and the first two units of the 600,000-kw. Mactaquac plant on the St. John River are expected to go into service in 1968. The Mactaquac plant, which is designed for six 100,000-kw. units, will be completed by 1976. The capacity of New Brunswick's largest thermal station, located in East Saint John, will be increased in 1965 by the addition of a 13,340-kw. unit. In 1966 installation of a 100,000-kw. unit will take place, raising the total capacity of this station to 160,840 kw.

## Quebec

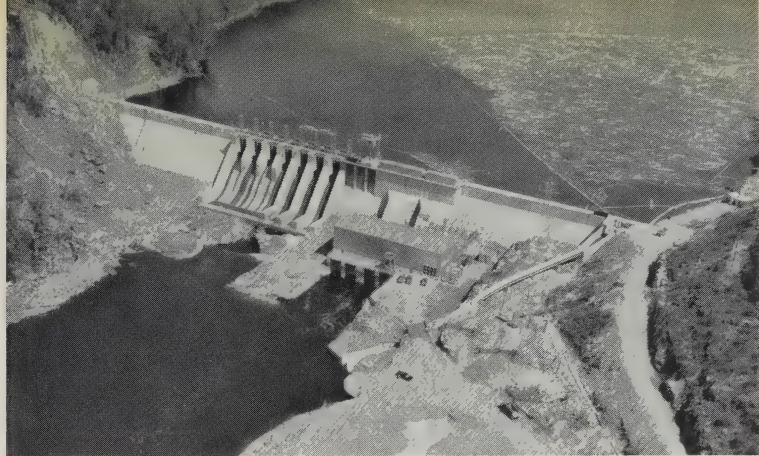
Quebec is richest of all the provinces in water power resources and leads also in terms of developed water power. Its present installation of 9.6 million kilowatts lies entirely within the St. Lawrence River basin, where another 5.8 million kilowatts of generating capacity is under construction. Considerable power remains to be developed before the full potential of this great river system is exploited. The Beauharnois plant on the St. Lawrence River, with an installed generating capacity of 1,574,260 kw. is the largest hydro-electric plant in Canada.

Because of the abundance of water power in Quebec, the role of thermal power in Quebec's power economy has been relatively small. However, the growing emphasis on thermal power in other parts of Canada is also beginning to be apparent in Quebec where thermal capacity will not only help to guarantee an adequate power supply but will also add flexibility to the province's power system which is almost exclusively fed by hydro plants. The first 150,000-kw. unit of a large thermal plant went into operation in 1964 at Tracy, near Sorel. Three other 150,000-kw. units are scheduled for installation at Tracy by 1967. Moreover, a plan for the construction of a 300,000 kw. thermal plant for service in 1970 in the Gaspé Peninsula has been announced.

In the field of hydro-electric development, the Carillon hydro station on the Ottawa River, which produced first power in 1962, was completed in 1964. The Carillon plant comprises 14 units totalling 630,000 kw. Also completed was the fourth 12,000-kw. unit at the Rapid II hydro plant on the Ottawa River, raising the plant's capacity to 48,000 kw.

The interest of power engineers both in Canada and abroad is centred on the huge Manicouagan-Outardes hydro complex now under construction in Quebec. This ambitious project involves harnessing the waters of the two rivers to provide nearly 6,000,000 kw. of hydro capacity at six new, and two existing, plants.

The first of eight units totalling 1,016,000 kw. will go into service in 1965 at Manic 2, and the entire plant will be completed in 1967. To be completed in the period to 1970 are capacities of 180,000 kw. at Manic 1, 761,600 kw. at



*Ontario Hydro's Red Rock Falls' generating station has a capacity of 40,000 kilowatts from two units. This \$19.1 million project is located on the Mississagi River.*

Outardes 3 and 644,000 kw. at Outardes 4. The Manic 5 plant, with total generating capacity of 1,344,000, will be completed in stages, with first power scheduled for 1970. At the 1,123,000-kw. Manic 3 plant, the first units are scheduled to produce power in 1972 and the final unit in 1974. Two existing stations, the 50,000-kw. Outardes 2 plant on the Outardes River and the 191,250-kw. McCormick development on the Manicouagan River, will be extended to 440,000 kw. and 303,750 kw. respectively.

At Manic 5, construction crews are building one of the highest and most massive dams of its kind in the world. Over 4,000 feet long, the dam, a buttressed, multi-arch structure, will rise some 703 feet at the highest point above bedrock. The reservoir will have storage capacity of 115 million acre-feet and will take an estimated eight years to fill. The dam at Manic 2 will incorporate hollow cells which reduce concrete volume without affecting the strength or stability of the structure. This dam will be the largest in the world using the "hollow joint" principle.

Energy from the Manicouagan-Outardes complex will be carried to load centres in Montreal and Quebec City via three 735-kv. transmission lines. The choice of 735-kv. line voltage, rated among the highest in use anywhere, has necessitated a considerable amount of pioneering in the design and manufacture of power transmission equipment.

## **Ontario**

Ontario has amassed a total of 5.9 million kilowatts of installed hydro-electric generating capacity, surpassing that of all provinces except Quebec in installed water power capacity. In terms of installed thermal-electric capacity, Ontario's total of 2.9 million kilowatts far exceeds the corresponding total for any other province in Canada.

Of the provinces with major water power resources, Ontario alone has developed the greatest part of these resources. While the harnessing of some remaining hydro sites is continuing, the tempo of thermal-electric development has moved quickly ahead in recent years. The current schedule in Ontario calls for nearly 5.2 million kilowatts of both hydro and thermal capacity to be installed in the years, 1965-1971. More than 90 p.c. of the new capacity will be installed in thermal plants.

In the field of thermal development, a 300,000-kw. unit was brought into service in 1964 at the Lakeview generating station on the shore of Lake Ontario, just west of Toronto. Five more units are scheduled for service at Lakeview between 1965 and 1968, when the ultimate station capacity of 2,400,000 kw. will have been reached. Another large station, to house four units of 500,000 kw. each, is scheduled to be completed by 1971 near Court-right, about 14 miles south of Sarnia. As noted above, construction of Canada's first full-scale nuclear reactor, a 200,000-kw. single unit station at Douglas Point on the shore of Lake Huron, is expected to be completed in 1965, and an even larger nuclear plant comprising two 540,000-kw. units has been proposed for service by 1971 on the shore of Lake Ontario, east of Toronto.

During 1964, the net increase in Ontario's hydro-electric capacity totalled only 12,125 kw. Considerable capacity remained under construction at year's end, however, including the Harmon and Kipling stations on the Mattagami River in northeastern Ontario and Mountain Chute on the Madawaska River in southeastern Ontario.

The Mountain Chute station, with two units totalling 160,000 kw., is scheduled for service in 1967. At both Harmon and Kipling, initial capacity will amount to 129,200 kw., with the former coming into service in 1965 and the latter in 1966. There is provision in the Harmon and Kipling developments for eventual installation of another 129,200 kw. at each site and similar provision has been made for eventually doubling the 121,600-kw. station at Little Long Rapids and the 174,800 kw. at Otter Rapids on the Abitibi River, all of which are in northeastern Ontario.

## Prairie Provinces

Of the three Prairie Provinces, Manitoba is the most abundantly endowed with water power resources and leads in total installed hydro-electric capacity. Until the mid-1950's, the Winnipeg River with a total generating capacity of 567,650 kw. at six generating stations, provided much of southern Manitoba's electric power requirements. In the few years from 1957 to 1960, however, continuing growth in electrical consumption was met by the construction of thermal stations each with generating capacities of 132,000 kw. at Brandon and Selkirk.

In the north, the 168,750-kw. Kelsey hydro station on the Nelson River was placed in operation in 1961 for mining purposes. Over the past few years, construction has been underway on a hydro plant on the Saskatchewan River at Grand Rapids where 330,000 kw. began service in 1965. There will be provision in the plant for the eventual addition of a further 110,000 kw.

In accordance with arrangements between the Governments of Canada and Manitoba, joint investigation of the Nelson River was continued in 1964. Information obtained from the investigation is now being used in studies to assess the cost of development at a number of important Nelson River sites.

Saskatchewan relies upon thermal stations to produce most of its electric power. At the end of 1964, thermal capacity made up some 65 per cent of the province's electrical capacity. Nevertheless, there has been a rapid increase recently in the tempo of hydro development, the first step in a program to develop the water power resources of the Saskatchewan River in Saskatchewan.



*Between 1950 and 1960 electric generating capacity in Saskatchewan increased sixfold. In 1963, waters of the Saskatchewan River were harnessed. Energy from Squaw Rapids is now supplementing thermal power for use in the province's homes and industries.*

Until 1963, Saskatchewan's total hydro-electric generating capacity of approximately 119,000 kw. was used solely to service mining operations in remote areas of the province. The domestic and industrial demand in the southern part of the province was served entirely by thermal stations. In 1963, however, the installation of 134,000 kw. of hydro capacity at Squaw Rapids on the Saskatchewan River marked the first time that hydro-electric power generated in the province had been fed into the general distribution system. Another 67,000 kw. was installed in 1964 at Squaw Rapids and two other units totalling 86,000 kw. will be commissioned by 1967, bringing the total plant capacity to 287,000 kw. The dam and reservoir on the South Saskatchewan River near Outlook, are being built primarily for irrigation purposes, but hydro-electric facilities totalling 186,600 kw. will be included. Two units each of 62,200 kw., will be installed in 1967 at Outlook and a third unit of the same size, in 1969.

The incidence of vast fuel resources has placed thermal development in the forefront in Alberta. Considerable reserves of water power are available in the province, principally in the far northern areas, remote from centres of population. As a consequence, the increasing demand for power in southern Alberta has been met by thermal plants, such as that at Edmonton with 330,000 kw. and the Wabamun plant with 282,000 kw.

At the end of 1964, thermal capacity in the province totalled 936,000 kw., with another 450,000 kw. under construction. Alberta's hydro installations, totalling about 300,000 kw., are located in the southeastern region. In 1965, the first unit at Big Bend on the Brazeau River will be ready for operation, adding 144,000 kw. to the province's hydro generating capacity. Another unit with generating capacity of about 175,000 kw. is scheduled for operation in 1966, and a pump-generator station, operating in conjunction with the Big Bend development, will provide another 19,440 kw. in two units.

## **British Columbia**

British Columbia's many fast-flowing rivers offer a wealth of opportunity for power development and give the province a standing second only to Quebec in terms of available water power resources. At the end of 1964, the installed hydro-electric capacity totalled 2,613,000 kw. With another 845,000 kw. installed in thermal stations, it is apparent that thermal energy also plays an important part in the power economy of the province.

No new electric capacity was brought into service in 1965 and most of the new capacity scheduled for service consists of the single 150,000-kw. unit being installed at the Burrard station near Vancouver. There are plans for installing three other similar units at Burrard. Development of the Columbia and Peace Rivers was of major significance to British Columbia in 1964.

In September 1964, the Governments of Canada and the United States exchanged instruments of ratification for the Columbia River Treaty and Protocol thereto, clearing the way for a start on construction of three large storage dams on the Columbia River in Canada. Canada is entitled to one-half of the benefits accruing in the United States from regulation of 15.5 million acre-feet of the storage provided in Canada.

At the time of the exchange, Canada received from the United States almost \$254 million (U.S. Funds) for the 30-year sale of Canada's power entitlement on the United States' portion of the Columbia River. When the treaty projects in Canada are completed, the United States will make an additional payment of \$64.4 million (U.S. Funds) for flood control benefits. Completion of the storage reservoirs in Canada will afford "at site" development of several million kilowatts of hydro-electric capacity in the Canadian portion of the basin.

Substantial construction progress was made at the Portage Mountain hydro development on the Peace River. A major part of the project will be a 600-foot-high dam containing 60 million cubic yards of material, creating a 680-square mile reservoir impounding a total of 62 million acre-feet of water. The powerhouse will be underground and will house ten units totalling 2,270,000 kw. Three units are scheduled for service by the autumn of 1968 and the others at intervals in later years.

*When completed, Portage Mountain Dam on the Peace River, where this conveyor belt is operating, will house the greatest concentration of power-generating facilities in British Columbia. The dam will create a reservoir 680 square miles in area. First power is scheduled for 1968.*

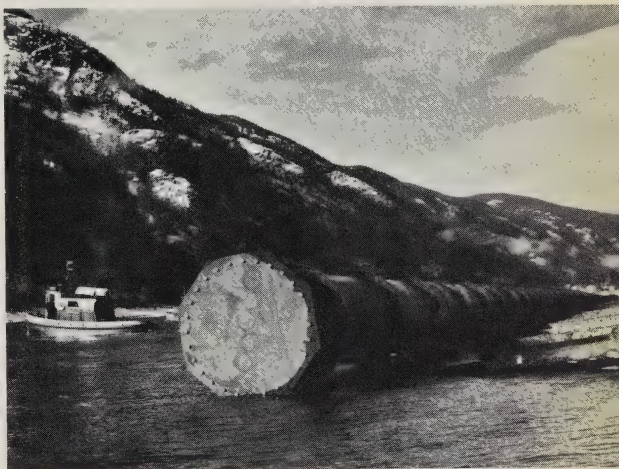


## Yukon and Northwest Territories

Due to lack of developed native fuel sources and to transportation difficulties, water power is of special importance in the development of mining areas such as Yellowknife in the Northwest Territories and Mayo in Yukon Territory. The Yukon Territory has substantial water power resources on the Yukon River and its tributaries, although only 28,000 kw. of hydro capacity and a number of small plants totalling 4,000 kw. supply the power needs in the region.

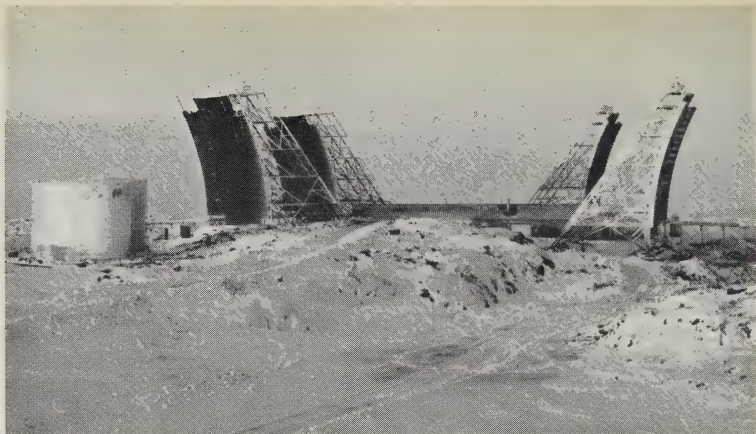
In the Northwest Territories, extensive water power resources exist on rivers flowing into Great Slave Lake. At present, however, electrical demands are met by 17,000 kw. of hydro capacity and another 25,000 kw. of thermal capacity. On the Taltson River which drains to Great Slave Lake, a hydro plant is under construction at Twin Gorges. By late 1965, the new capacity of 18,000 kw. will more than double the installed hydro-electric capacity in the Northwest Territories.

*This 800-foot-long section of 66-inch-diameter steel pipe rolled into the Columbia River, British Columbia, recently to form an intake structure for a pipeline to feed clear water to a pulp mill during construction of Arrow Dam.*



**Installed Electric Generating Capacity in Canada  
January 1, 1965**

Province or Territory	Installed Generating Capacity—KW.		
	Hydro	Thermal	Total
British Columbia.....	2,613,000	845,000	3,458,000
Alberta.....	291,000	936,000	1,227,000
Saskatchewan.....	320,000	610,000	930,000
Manitoba.....	747,000	346,000	1,093,000
Ontario.....	5,937,000	2,865,000	8,802,000
Quebec.....	9,553,000	317,000	9,870,000
New Brunswick.....	229,000	300,000	529,000
Nova Scotia.....	143,000	389,000	532,000
Prince Edward Island.....	—	58,000	58,000
Newfoundland.....	453,000	73,000	526,000
Yukon Territory.....	28,000	4,000	32,000
Northwest Territories.....	17,000	25,000	42,000
<b>Canada.....</b>	<b>20,331,000</b>	<b>6,768,000</b>	<b>27,099,000</b>



*A 554-mile communications' network, stretching from Hay River, Northwest Territories, to Victoria Island in the Arctic, was opened in 1964. The network uses the tropospheric scatterwave system, which is capable of skipping distances up to 200 miles without intermediate relay equipment. The antennae are directionally-oriented to the next station on the network.*

## Canadian Economy 1964

# New High Records in Production

When 1964 drew to a close, the expansion in economic activity which had begun early in 1961 had lifted the Canadian economy to new high records of production, trade and employment. By the fourth quarter, Gross National Product was running at a seasonally adjusted annual rate of \$48.0 billion, nearly 33 per cent higher than at its cyclical low in terms of value and nearly 25 per cent in terms of volume.

For the year as a whole, Gross National Product was \$47.0 billion compared with \$43.2 billion in 1963. This gain of nearly 9 per cent was the largest annual advance since 1956. With prices appreciably higher, the increase in terms of constant dollars was nearly 7 per cent. Western grain crops, though large, were considerably below the exceptional harvest of 1963, with the result that the rate of increase in non-farm output exceeded that in output as a whole.

## *Uneven Pace of Expansion*

The pace of expansion in 1963 and 1964 was uneven. There was an upsurge in economic activity in the closing quarter of 1963 and the opening quarter of 1964 partly as a result of special influences, notably the heavy volume of wheat exports to the USSR, which had an immediate impact on farm income, the government's winter house-building incentive program and, possibly also, decisions taken in anticipation of the progressive imposition of the sales tax on certain production machinery and building materials.<sup>1</sup> With these special factors absent, or not present in the same degree, the pace of advance was more moderate during the rest of 1964.

<sup>1</sup> On July 8th, 1963, it was announced that certain building materials and production machinery would no longer be exempt from the federal sales tax of 11 per cent. The tax was to be imposed in three stages: 4 per cent in June 1963, rising to 8 per cent in April 1964 and to the full 11 per cent in January 1965

The expansion in 1964 was broadly based, with all the components of final demand contributing to the gain in the total. In addition, a rising rate of business stock-building was adding to the demands on the nation's production until the closing quarter of the year and the annual figure substantially exceeded that of 1963. However, with outlays for capital goods up 18 per cent, the strongest forward impetus came from the business investment sector; expenditures for plant and equipment made a major gain, reflecting larger programs in a wide range of industries; housing reached new records in units started, completed and under construction.

Consumer markets were buoyant; spending rose almost  $7\frac{1}{2}$  per cent, one of the largest gains in recent years. The demand for durables was unusually strong, although the rate of increase in sales of cars was not as high as in the two previous years.



*A track-laying crew works on the 430-mile Great Slave Lake railway which runs from Roma, Alberta, to Hay River, Northwest Territories. The line was completed in the fall of 1964.*

## *International Climate Favoured Trade Growth*

The international climate favoured the expansion of trade despite a slowing down in the rate of growth in some overseas countries during the course of the year. In addition to a major increase in the already high level of wheat shipments, there were substantial gains in exports of a wide variety. Exports of goods and services were up 15 per cent. The high and rising level of economic activity in Canada, particularly in the investment sector, contributed to a 13 per cent rise in imports of goods and services. The further narrowing of the deficit on current international transactions was one of the notable developments of the year.

The Government sector gave less support to the economy in 1964 than in 1963 in that revenue rose more than expenditure, bringing the government sector into virtual balance.

The salient developments on the income side were a nearly 9 per cent rise in labour income, the largest since 1956. Corporation profits for the year as a whole were up nearly 15 per cent, despite a mixed quarterly movement, with some easing in the summer quarters; farm income reflected the drop in crop production from the exceptionally high level of the previous year.

## *Expansion in Employment*

The changes in expenditure and income described above were associated with an expansion in employment of 3.6 per cent in 1964 and a drop in the average rate of unemployment from 5.5 to 4.7 per cent of the labour force. The growth in non-agricultural employment was 4.3 per cent. By the end of the year the rate of unemployment had fallen to 4.0 per cent from 4.9 per cent a year earlier.

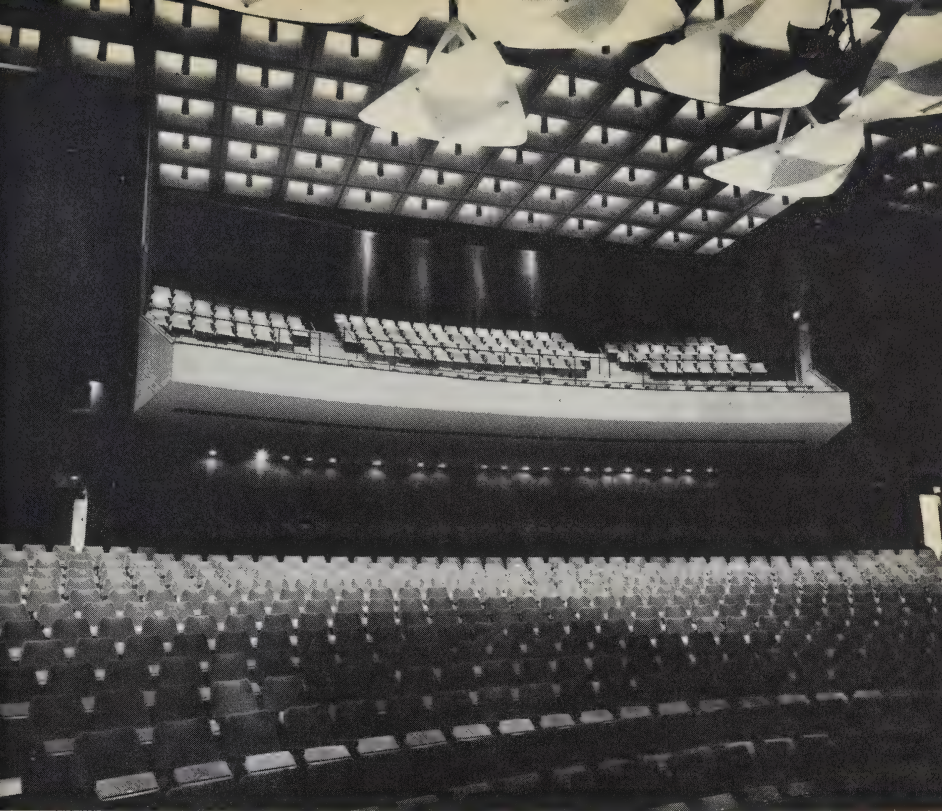
Prices increased slightly more in 1964 than in 1963. The rise in consumer prices was much the same in both years but the imposition of the sales tax mentioned earlier contributed to a relatively large increase in prices of capital goods. Prices overall in 1964 were a little more than 2 per cent higher than in the previous year.

The near  $7\frac{1}{2}$  per cent rise in consumer spending in 1964 was one of the largest in recent years. The largest relative gain among the main components was shown by durables, but outlays for non-durables or services were also considerably higher. The rise in outlays for household durables may have been a reflection, in part, of the high level of activity in housing. While purchases of cars did not rise as much as the 14 per cent shown in the two previous years, this development probably reflects the curtailment of supplies to the dealers in the closing part of the year when strikes occurred in the automotive industry.

Investment in fixed capital was up 18 per cent in 1964 compared with 1963. In terms of constant dollars the rate of growth was the highest since the investment boom of 1956.

## *Housing Outlays 18 p.c. Higher*

Outlays on housing were over 18 p.c. higher than in 1963. Dwelling starts and completions in 1964, and units under construction at year-end, set



*A theatre forms part of the Fathers of Confederation Memorial Building, Charlottetown, Prince Edward Island. Also included in the building complex, which opened in 1964, are a museum, art gallery, library and memorial hall.*

new records. The number of building starts amounted to 165,700, surpassing the previous record of 164,600 made in 1958. Completions increased over 1963 levels by 18 per cent to about 151,000 units. Dwellings under construction increased from 96,600 at the end of 1963 to 107,700 at the end of 1964. About nine tenths of the expansion in housing starts was in multiple dwellings, mostly in urban areas.

Expenditures on non-residential construction also advanced by about 18 p.c. About half the gain was in utility projects, notably in the electric power, urban transit and railway industries.

Likewise, outlays for machinery and equipment moved 18 p.c. higher than in 1963. Some two thirds of the gain was in manufacturing with large investment programs by paper, primary metal, textile and transportation equipment industries; other major gains were in agriculture and the railway industry.

### *Investment in Business Inventories*

Although investment in business inventories in 1964 was much the biggest annual increase so far in the economic expansion, the stocks held by business

did not appear high in relation to output. Stocks were built up at a rising rate in the first three quarters of the year, thus contributing to the demands on the nation's production. However, the rate of increase fell sharply in the fourth quarter. Four fifths of the annual increase occurred in manufacturing and retail inventories; wholesale stocks also increased but at a much lower rate.

While domestic demand for final use and for the building-up of stocks was higher, foreign demand for Canadian export products was unusually strong. In 1963 an exceptionally large crop of wheat in Canada had coincided with a near-failure in the Soviet Union and well below-average crops in Europe, with the result that shipments of wheat rose sharply. Demand for other export products was stimulated as economic activity continued to rise in the United States in 1964, in the industrialized countries of Western Europe, and in Japan—though restraining measures were adopted in a number of these countries to protect their balance of payments and ease inflationary pressures. Canada's merchandise exports were up by about 16 per cent. Massive shipments of wheat to the USSR and other Communist countries were a special factor. Other gains were made in zinc, nickel, copper, iron ore and concentrates, newsprint paper, wood pulp, aircraft, cars and trucks, motor vehicle parts, fish, barley, petroleum, farm and non-farm machinery, lumber and natural gas.

Incomplete commodity detail on imports suggest strength in Canadian demand for imported non-farm machinery, automobile parts, tractors, engines, automobiles, and plate, sheet and strip steel.

The result of these changes in merchandise trade was an increase in the surplus on goods of \$197 million. This was, however, partly offset by a widening in the deficit on services of \$101 million. The overall deficit, the smallest since 1954, dropped to \$428 million, compared with \$524 million in 1963. The major part of the rise in the deficit on services is attributable to a shift from surplus to deficit in the travel account.

### *Government Purchases Higher*

Expansionary influences in 1964 came mainly from the private sector. Government purchases of goods and services were appreciably higher than in the previous year, largely because of a close to ten p.c. increase at the provincial-municipal level. Federal purchases of goods and services, which amount to a little over half those of other levels of government, were  $3\frac{1}{2}$  per cent higher. Other government expenditure, that is to say, transfer payments, which are not directly a part of Gross National Product but contribute indirectly to final demand by supporting expenditure by other sectors, rose by eight per cent. Government revenues rose more sharply than expenditures and the government sector as a whole came into virtual balance, with the federal deficit shifting to a surplus for the first time since 1957 and the provincial-municipal deficit remaining unchanged.

On the income side, labour income rose nearly nine p.c., reflecting the improvement in employment and some advance in wage rates. This gain was the largest recorded since 1956. Income in the goods-producing, and in the service-producing, industries rose at approximately the same rate. Among the goods-producing industries, the largest increase, about  $11\frac{1}{2}$  p.c., was in the



*A \$50,000,000 province of Ontario office extension program is under construction in Toronto. A superimposed aerial view shows the projected new complex at right rear. The Legislative Building and Whitney Building (East Block) are at left. When completed the project will house some 9,000 civil servants in four high rise office towers.*

construction industry; among the service-producing industries the largest gain, 11 p.c., was in finance and service. These gains in labour income were associated with an increase in the number of employed paid workers of nearly 4½ p.c. There is little evidence of much change in hours worked.

### *Corporate Profits Establish Record*

Corporate profits (before taxes and before dividends paid abroad) continued to rise, reaching a new record in 1964. After a very strong first quarter, profits dipped in the summer quarters but rose sharply in the fourth, bringing the annual figure more than 14 p.c. above that of 1963. Profits rose substantially in most industries.

While net farm income from farm production was close to 15 p.c. lower in 1964 than in 1963 it was appreciably higher than the average of the decade 1954-63; this decline largely reflects the smaller crop referred to earlier. At the same time, sales from the exceptional crop of the previous year brought farm cash income up 8½ p.c., the highest ever recorded.

## Source of Personal Income, 1950 and 1959-64

(Millions of Dollars)

Source	1950	1959	1960	1961	1962	1963	1964
Wages, salaries and supplementary labour income.....	8,629	17,459	18,251	18,996	20,233	21,546	23,416
Less: Employer and employee contributions to social insurance and government pension funds.....	-256	-652	-745	-787	-812	-847	-892
Military pay and allowances.....	137	496	509	550	586	598	583
Net income received by farm operators from farm production <sup>1</sup> .....	1,156	1,126	1,178	978	1,492	1,587	1,362
Net income of non-farm unincorporated business.....	1,439	2,210	2,213	2,274	2,376	2,472	2,587
Interest, dividends and net rental income of persons.....	1,268	2,599	2,836	3,030	3,308	3,555	3,760
Transfer payments to persons:							
From government (excluding interest).....	1,030	2,755	3,129	3,441	3,729	3,838	4,159
Charitable contributions by corporations.....	25	43	40	40	44	44	44
<b>Personal Income.....</b>	<b>13,428</b>	<b>26,036</b>	<b>27,411</b>	<b>28,522</b>	<b>30,956</b>	<b>32,793</b>	<b>35,019</b>

<sup>1</sup> This item differs from item five of the table on p. 109 in that it excludes the adjustment to take account of accrued net earnings arising out of the operations of the Canadian Wheat Board.

## Disposition of Personal Income, 1950 and 1959-64

(Millions of Dollars)

Disposition	1950	1959	1960	1961	1962	1963	1964
<b>Personal Direct Taxes:</b>							
Income taxes.....	612	1,744	1,978	2,125	2,316	2,487	2,930
Succession duties and estate taxes.....	66	130	158	146	165	171	185
Miscellaneous.....	62	214	224	240	249	253	292
<b>Total Personal Direct Taxes.....</b>	<b>740</b>	<b>2,088</b>	<b>2,360</b>	<b>2,511</b>	<b>2,730</b>	<b>2,911</b>	<b>3,407</b>
<b>Personal Expenditure on Consumer Goods and Services:</b>							
Non-durable goods.....	6,711	11,373	11,785	12,178	12,961	13,508	14,355
Durable goods.....	1,451	2,678	2,669	2,716	2,952	3,223	3,558
Services.....	3,864	8,540	9,058	9,572	10,000	10,685	11,518
<b>Total Personal Expenditure on Consumer Goods and Services.....</b>	<b>12,026</b>	<b>22,591</b>	<b>23,512</b>	<b>24,466</b>	<b>25,913</b>	<b>27,416</b>	<b>29,431</b>
<b>Personal Saving:</b>							
Personal saving excluding farm inventory change.....	583	1,433	1,523	1,823	2,137	2,155	2,280
Value of physical change in farm inventories.....	79	-76	16	-278	176	311	-99
<b>Total Personal Saving.....</b>	<b>662</b>	<b>1,357</b>	<b>1,539</b>	<b>1,545</b>	<b>2,313</b>	<b>2,466</b>	<b>2,181</b>
<b>Personal Income.....</b>	<b>13,428</b>	<b>26,036</b>	<b>27,411</b>	<b>28,522</b>	<b>30,956</b>	<b>32,793</b>	<b>35,019</b>
<b>Personal Disposable Income<sup>1</sup>.....</b>	<b>12,688</b>	<b>23,948</b>	<b>25,051</b>	<b>26,011</b>	<b>28,226</b>	<b>29,882</b>	<b>31,612</b>

<sup>1</sup> Personal income less total personal direct taxes.

## National Income and Gross National Product, 1950 and 1959-64

(Millions of Dollars)

Item	1950	1959	1960	1961	1962	1963	1964
<b>Income</b>							
Wages, salaries and supplementary labour income.....	8,629	17,459	18,251	18,996	20,233	21,546	23,416
Military pay and allowances.....	137	496	509	550	586	598	583
Corporation profits before taxes <sup>1</sup> .....	2,118	3,003	2,905	2,841	3,166	3,383	3,895
Rent, interest and miscellaneous investment income.....	890	2,315	2,442	2,670	2,871	3,093	3,277
Accrued net income of farm operators from farm production.....	1,322	1,121	1,184	1,008	1,498	1,725	1,472
Net income of non-farm unincorporated business including independent professional practitioners.....	1,439	2,210	2,213	2,274	2,376	2,472	2,587
Inventory valuation adjustment.....	-374	-122	-80	-89	-113	-195	-121
<b>Net National Income at Factor Cost.....</b>	<b>14,161</b>	<b>26,482</b>	<b>27,424</b>	<b>28,250</b>	<b>30,617</b>	<b>32,622</b>	<b>35,109</b>
Indirect taxes less subsidies.....	2,000	4,259	4,470	4,696	5,273	5,568	6,331
Capital consumption allowances and miscellaneous valuation adjustments.....	1,913	4,204	4,459	4,540	4,914	5,172	5,607
Residual error of estimate.....	-68	-30	-99	-15	-243	-182	-44
<b>Gross National Product at Market Prices.....</b>	<b>18,006</b>	<b>34,915</b>	<b>36,254</b>	<b>37,471</b>	<b>40,561</b>	<b>43,180</b>	<b>47,003</b>

<sup>1</sup> Excludes dividends paid to non-residents.

## Gross National Expenditure, 1950 and 1959-64

(Millions of Dollars)

Item	1950	1959	1960	1961	1962	1963	1964
Personal expenditure on consumer goods and services.....	12,026	22,591	23,512	24,466	25,913	27,416	29,431
Government expenditure on goods and services <sup>1</sup> .....	2,344	6,490	6,755	7,236	7,710	8,024	8,607
Business gross fixed capital formation <sup>2</sup> .....							
New residential construction...	883	1,734	1,443	1,458	1,577	1,707	2,021
New non-residential construction.....	1,042	2,589	2,577	2,683	2,638	2,835	3,343
New machinery and equipment	1,423	2,571	2,672	2,494	2,745	3,049	3,604
Value of physical change in inventories:							
Non-farm business inventories.....	399	421	275	439	335	200	510
Farm inventories and grain in commercial channels.....	151	-64	86	-409	222	291	-130
Exports of goods and services.....	4,183	6,683	7,008	7,631	8,259	9,077	10,440
Less: Imports of goods and services.....	-4,513	-8,131	-8,172	-8,542	-9,082	-9,601	-10,868
Residual error of estimate.....	68	31	98	15	244	182	45
<b>Gross National Expenditure at Market Prices.....</b>	<b>18,006</b>	<b>34,915</b>	<b>36,254</b>	<b>37,471</b>	<b>40,561</b>	<b>43,180</b>	<b>47,003</b>

<sup>1</sup> Includes outlays on new durable assets such as building and highway construction by governments, other than government business enterprises; includes also net purchase of government commodity agencies.<sup>2</sup> Includes capital expenditures by private and government business enterprise, private non-commercial institutions and outlays on new residential construction by individuals and business investors.



*Two halves of a housing unit, part of a large convoy, begin their long journey from Calgary, Alberta, where complete portable housing facilities are made to order.*

### Current Trends in Industry<sup>1</sup>

## Three Cycles of Production

During the decade encompassing the 1953 to 1964 period, three distinct cycles can be discerned in the aggregate volume of production in Canada. There also have been differing growth trends underlying these cycles.

After the first major cyclical downturn following World War II (this downturn extended from the third quarter of 1953 to the second quarter of 1954), there was a period of rapid expansion in production. This reached a peak in the fourth quarter of 1956, at which time aggregate real output was 18 p.c. above the previous high. In terms of growth rates, this first cyclical upturn forms a part of the period of rapid expansion subsequent to World War II.

Beginning in 1957, there followed a period of relatively little growth in aggregate production, encompassing the entire second cycle and the downward phase of the third cycle, which came to a close in the first quarter of 1961.

<sup>1</sup> For the purpose of this article, industry includes forestry, fishing and trapping, mining, manufacturing, public utilities, construction, wholesale and retail trade, transportation, storage, communication, finance, insurance, real estate, public administration and defence, and community, recreation, business and personal service, wherever non-agricultural output is mentioned. Total, or aggregate, real output includes agriculture as well. Production represents the unduplicated output of individual industries located in Canada, as measured in 1949 dollars. Total production is the sum of the output of all the individual industries.

The gain from the fourth quarter of 1956 (first peak) to the peak of the second cycle (first quarter, 1960) was 6.3 p.c., which is only about one third of the increase achieved during the first cycle.

The expansion which began early in 1961 has achieved more substantial gains, surpassing those of the 1954-56 upturn. However, the current expansion has been of longer duration. Thus growth, although steady, has been slower than during the first cyclical upturn. Nevertheless, the intervening period of relative stagnation appears to have been terminated in 1961.

The aggregate volume of production is the net result of summing the unduplicated output of all the industries located in Canada. Therefore, changes in the volume of aggregate real output can be explained by looking at the growth patterns of individual industries.

The following table shows the percentage increases in total non-agricultural output<sup>1</sup> and in the output of selected industry groupings over the course of the three cycles. It should be kept in mind, however, that the first two cycles are measured from peak to peak, that is, both had run their full course during the 13 quarter span being measured, while the latest expansion was still in progress in the fourth quarter of 1964 (a time span of 19 quarters).

Table 1. Three Cycles of Production Trends, 1953-64

Item	3Q'53-4Q'56 % Δ	4Q'56-1Q'60 % Δ	1Q'60-4Q'64 % Δ
Non-agricultural real output.....	20.4	7.9	22.8
Forestry.....	19.0	1.3	8.8
Mining.....	54.3	17.4	26.9
Manufacturing.....	17.4	3.8	25.4
Non-durable.....	15.9	9.9	23.3
Durable.....	19.0	-2.7	27.8
Construction.....	27.8	-0.9	18.6
Electric power and gas utilities.....	43.4	37.2	46.5
Transportation, storage and communication.....	26.4	7.9	30.8
Transportation.....	25.7	4.7	32.3
Trade.....	20.7	6.9	17.4
Wholesale.....	20.8	11.0	16.6
Retail.....	20.6	4.7	17.9
Finance, insurance and real estate.....	16.9	15.5	23.9
Public administration and defence.....	10.4	9.1	8.6
Community, recreation, business and personal service.....	12.1	12.2	18.5

The patterns of growth and cyclical behaviour differ widely from industry to industry. Generally speaking, most industries fall into one of three broad groups, which show distinct differences in output movements over the course of the cycles in aggregate production.

The primary industries, such as agriculture, forestry and fishing and trapping, show strong but erratic fluctuations, as their production processes have been subject to irregular factors which are not as predominant in other industries. Such a factor, for instance, is the influence of abnormal weather

<sup>1</sup> The comparisons are made in terms of non-agricultural output, as data for total real output are not yet available for the year 1964.



*Thousands of cans of salmon are prepared for shipment in this modern plant. In 1963 the salmon fishery of the Pacific coast was the largest dollar earner of the industry in Canada. The lobster fishery of the Atlantic area was second.*

conditions on the crops in agriculture. Of this group of primary industries, agriculture is the most important in terms of its contribution to aggregate output, constituting, as it did in 1949, about one tenth of total real output. The exclusion of agriculture from the comparison does not, however, alter the basic pattern of aggregate production. The low points in agricultural production, which were due to particularly poor crops, happened to coincide with the years in which the troughs in the aggregate volume of production occurred.

At the other extreme, the output of some tertiary industries, such as the finance, insurance and real estate and the community, recreation, business and personal service groups, showed little tendency toward either cyclical or irregular fluctuations<sup>1</sup>. Throughout most of the period these industry groups exhibited smooth expansionary paths.

### *Similar Cyclical Patterns*

The industries which showed the most pronounced cyclical fluctuations were manufacturing, transportation and trade. These three industry groups on the whole exhibited markedly similar cyclical patterns. Jointly they ac-

<sup>1</sup> The measurement of real output is difficult in these industry areas and labour input had to be used to represent output in some major industries. Consequently the measures used may not be as sensitive to these fluctuations as proper output measures would be.

counted for approximately one half of total production in Canada during the post-war period. These were the industries, therefore, that largely determined the cyclical movements in aggregate real output.

This fact becomes particularly apparent when the contributions of the various industries to the expansion in non-agricultural production are compared over the course of the three cyclical upturns. The following table shows such a comparison. Again, it must be remembered that whereas the first two expansions are measured from the trough to the peak in aggregate production, the current expansion is measured from the trough early in 1961 to the latest available quarter, namely, the fourth quarter of 1964. Table 2 shows, for each expansion, the effect of the change in the volume of output of each industry group on total non-agricultural output, i.e., it shows by how much the aggregate increased as a direct result of the gain in each of the components.

Table 2. Effects of Changes in Output during the Three Production Cycles

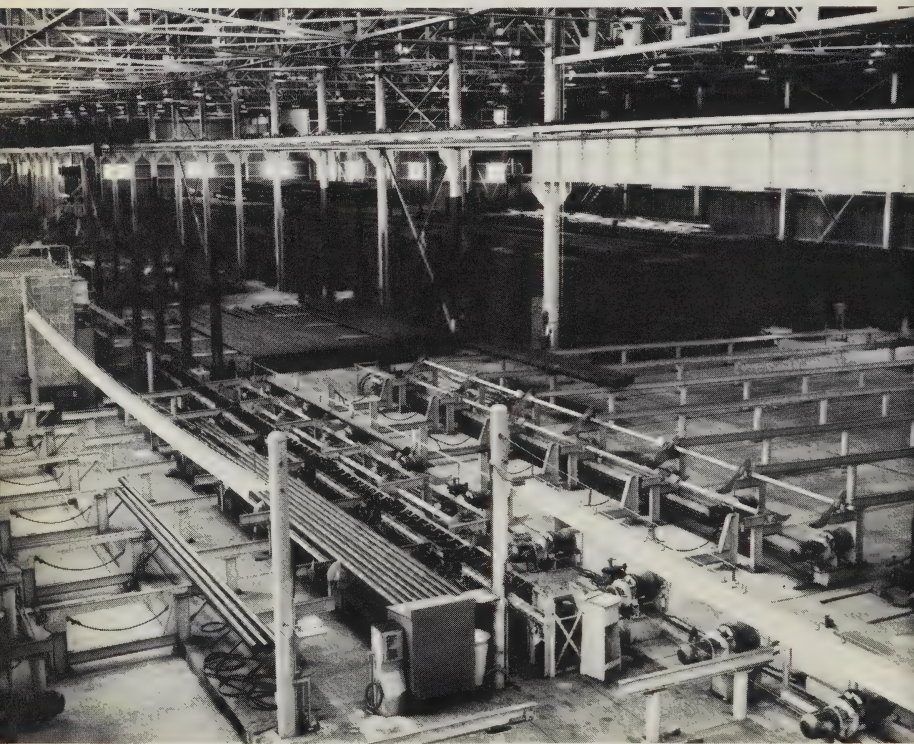
Item	First Cycle 2 Q '54-4 Q '56		Second Cycle 4 Q '57-1 Q '60		Third Cycle 1 Q '61-4 Q '64	
	Per cent change from previous trough	Effect on non- agricul- tural output	Per cent change from previous trough	Effect on non- agricul- tural output	Per cent change from previous trough	Effect on non- agricul- tural output
Non-agricultural real output . . . . .	22.2	22.2	10.1	10.1	23.7	23.7
Forestry . . . . .	17.9	0.4	33.7	0.6	21.9	0.4
Fishing and trapping . . . . .	3.9	—	-7.4	—	-1.3	—
Mining . . . . .	45.9	2.0	16.0	0.9	31.5	1.8
Manufacturing . . . . .	21.6	6.5	11.8	3.3	30.4	8.5
Non-durable . . . . .	16.5	2.6	13.1	2.0	23.8	3.7
Durable . . . . .	27.5	3.9	10.2	1.3	38.6	4.8
Construction . . . . .	34.0	2.5	-3.9	-0.3	25.7	1.8
Electric power and gas utilities . . . . .	34.0	0.8	28.7	0.8	40.7	1.4
Other goods industries, n.e.c. . . . .	21.2	0.3	1.5	—	8.9	0.1
Transportation, storage and com- munication . . . . .	34.5	3.0	9.7	0.9	27.8	2.7
Transportation . . . . .	40.1	2.5	9.0	0.6	30.0	2.1
Trade . . . . .	24.4	3.8	9.8	1.5	19.2	3.0
Wholesale . . . . .	31.9	1.6	16.8	0.9	25.3	1.4
Retail . . . . .	20.8	2.2	6.1	0.6	16.0	1.6
Finance, insurance and real estate . . . . .	12.0	1.3	9.6	1.0	19.7	2.2
Public administration and defence . . . . .	7.0	0.4	5.1	0.3	3.8	0.2
Community, recreation, business and personal service . . . . .	10.7	1.2	11.1	1.1	16.0	1.7

As can be seen from the tables, not only did the gains in total non-agricultural output differ between the expansions, but the contributions of the various industries to this total also diverged. In terms of percentage contribution to total growth, if not in terms of actual gains achieved, the current upturn falls between the first and second expansion, although there are more similarities between the 1954-56 upturn and the current one (when broad industry groups are considered) than there are between either of these and the 1958-60 expansion. Over the course of the 1958-60 upswing, the tertiary industries, exclusive of transportation and trade, accounted for about one quarter of the total gain, with mining, electric power and forestry contributing another 22 p.c. The cyclically sensitive manufacturing, transportation and trade groups together accounted for about 54 p.c. of the gain, while construction actually declined during this period.

Over the course of the 1954-56 and the 1961-64 upswings, the tertiary industry group (again exclusive of transportation and trade) contributed 13 p.c. and 20 p.c., respectively. The primary industries (including utilities) accounted for about 15 p.c. during both expansions, while the manufacturing, trade and transportation groups jointly contributed 58 p.c. and 57 p.c., respectively. Thus this group of cyclically sensitive industries has, during the current upturn, exercised as strong an influence as before. Construction, as a result of the investment boom of the mid-fifties, contributed 11 p.c. to the first expansion, but accounted for only 8 p.c. of the current increase.

The pattern of decelerated growth during the 1957-61 period and the renewed expansion since 1961 were so widespread as to apply to most industry groups, construction and mining being the most conspicuous exception. However, it is clear that the cyclically-sensitive industry group, namely, manufacturing, transportation and trade, played a particularly important role in the expansion, with manufacturing showing the largest gains.

*Alberta's primary metal industries include metal rolling, casting and extruding, iron foundries, iron and steel mills, smelting and refining—and steel pipe and tube mills such as this plant at Camrose.*





*Canada is one of the leading asbestos producers supplying approximately 40 p.c. of the world output. Above is shown a new asbestos mine which was recently opened at Baie Verte, Newfoundland.*

### *Accelerated Expansion*

The rate of expansion in trade, although accelerated when compared with the 1957-61 period, was not as rapid as during the 1954-56 upturn. Retail trade in particular showed a smaller rate of increase. During the 1954-56 period all components of retail trade showed some gains, with motor vehicle dealers and department stores making the largest contribution to the increase. These two stores continued to show substantial gains in the current expansion as well, jointly accounting for over one third of the increase in total retail trade volume. However, gains in other components were not as consistent.

Transportation also showed a smaller increase (30 p.c.) over the course of the current expansion than during the 1954-56 period, when there was a 40 p.c. gain. However, as shown in Table 1, when measured from the preceding peak, the gain in the 1961-64 period was greater (32 p.c. vs. 26 p.c., respectively). This was the result of the relatively mild decline during 1960, as opposed to the sharp drop in transportation output during the first cyclical downturn. In both instances railway transport was the most important contributor to these movements in total transportation output. During the current upturn, the railways were heavily engaged in the movement of grain for export, particularly



*Helicopters are particularly useful in the field of mining exploration, for aerial ice reconnaissance, search and rescue, as freight carriers, and for forest fire control.*

during late 1963 and 1964, which resulted in substantially increased transportation volume. Shipping was similarly affected during this period.

Manufacturing was not only the largest single contributor to the growth in non-agricultural output in the current period, but, with a 30 p.c. increase, it also surpassed the 22 p.c. gain it achieved between 1954 and 1956.

Non-durable manufacturing, in terms of cyclical behaviour, is very similar to retail trade. It reveals a pattern of fairly steady expansion, with declines and upswings over the course of the production cycles of much smaller amplitude than those in either wholesale trade or durable manufacturing.

### *Second Largest Increase Registered*

The large gains in the durable manufacturing component accounted for the major part of the increase in manufacturing output during both expansions. Over the 1954-56 period durables' output expanded by 28 p.c., while from the first quarter of 1961 to the fourth quarter of 1964 the increase was 39 p.c., which is the second largest increase exhibited by any major industry group in this period.

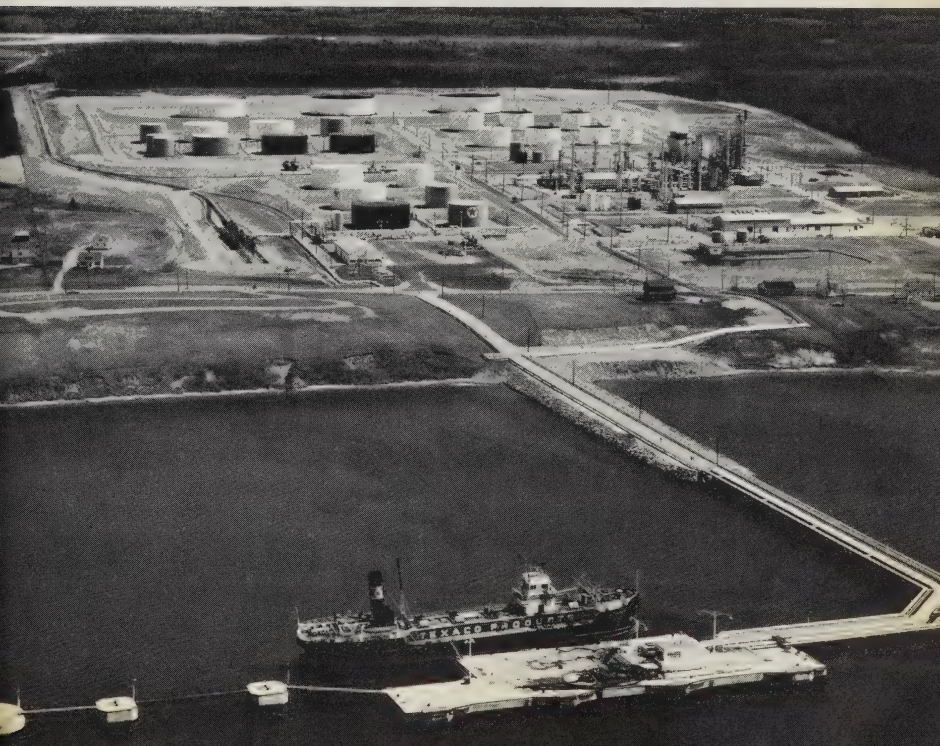
The two most important contributors to this gain were iron and steel products, with an increase of 45 p.c., and the motor vehicle industry which

showed a 65 p.c. rise in output. The latter industry, however, was affected by labour disputes at the end of 1964. Both these industries have been extremely sensitive to cyclical fluctuations in the economy and can almost be said to have determined the cyclical pattern of non-agricultural output in the post-war period. Both have shown unprecedented strength during the current expansion, particularly the automobile industry. In the case of the latter, as in total durable goods, the period of low level production, when output was below the 1956 peak, did not come to a close until the beginning of the current expansion, and the levels of the mid-fifties were not surpassed until 1962.

The electrical apparatus and supplies' group exhibits similar movements, while non-ferrous metal products have shown but little advance since 1960, except for a brief upsurge early in 1964. Non-metallic mineral products and wood products advanced fairly rapidly during the current expansion except for a slow-down early in 1963.

During the winter of 1963-64, and the fourth quarter of 1964, a combination of factors such as the government winter house-building incentive program and the anticipatory buying prior to the imposition of the second and third stage of the tax on building materials appears to have stimulated the output of the construction and building material industries to a considerable extent.

*At the end of 1963 there were 41 operating refineries in Canada. The refinery (above) opened in Dartmouth, Nova Scotia, in 1964.*





*Above, the Ontario strip mill at Algoma Steel Corporation. Eighteen iron and steel mills in Canada each employs 200 or more persons. Production of pig iron, steel ingots and castings were at their highest level in 1964.*

## Manufacturing

# Substantial Gains in 1964

Stimulated by expanding domestic and export demand for their products, Canadian manufacturers made further substantial gains in 1964; with volume of production and value of factory shipments increasing by about eight p.c. over figures for 1963. Indicated factory shipments, at \$31,172,000,000, exceeded the \$30,000,000,000 level for the first time, while employment, at 1,499,000, and salaries and wages, at \$6,981,000,000, also set new records, representing gains of 4.6 p.c. and 8.2 p.c., respectively, over figures for 1963.

The outstanding performance of the manufacturing industries in 1964 occurred within the context of a broadly-based expansion in the Canadian

economy. Outlays for business capital goods were up 18.1 p.c., providing the strongest individual impetus to expansion. Consumer markets were buoyant, with personal expenditures on non-durable goods increasing by 6.3 p.c., and on durable goods, by 10.4 p.c., resulting in a combined increase of 7.1 p.c. over the percentage in 1963. Export demand was also strong, with exports of commodities of all kinds increasing by 19.1 p.c. to a record \$8,095,000,000 in 1964.

The 8.3 p.c. increase in volume of manufactured goods in 1964 was composed of a 9.7 p.c. increase in durable goods industries and a 7.1 p.c. increase in non-durable goods, with both groups recording some fairly wide internal variations. The largest individual increase in either group was registered by non-metallic mineral products which had a gain of 14.2 p.c. over production in 1963, due in large part to the 30 p.c. gain in concrete products. All other groups in the durable goods sector also registered increases over production in 1963: iron and steel products, 12.5 p.c.; transportation equipment, 9.6 p.c.; non-ferrous metal products, 8.7 p.c.; electrical apparatus and supplies, 6.9 p.c.; and wood products, 4.8 p.c. The only component of any of these groups recording a decrease from 1963 was shipbuilding and repairs in the transportation equipment group which was down by 4.9 p.c.

In the non-durable sector, all groups increased their output over production in 1963 except clothing and knitting mills which showed a very slight decrease. The largest advances were registered in chemical and allied products,



*Almost two thirds of the clothing industries of Canada are in the province of Quebec. Ontario has the second largest number, and Manitoba is third.*

12.3 p.c.; rubber and rubber products, 12.2 p.c.; paper products, 8.9 p.c.; foods and beverages, 7.3 p.c.; and miscellaneous industries, 6.2 p.c. More modest gains were made by the printing, publishing and allied industries; tobacco products; products of petroleum and coal; and leather products. Among the components of the non-durable groups making substantial advances were grain mill products, distilleries, cotton goods, pulp and paper, and acids, alkalis, salts and fertilizers.

The indicated 7.7 p.c. increase in factory shipments in 1964 was not shared equally by all provinces. The highest increase, 10.3 p.c., is indicated for Nova Scotia, followed by Alberta with 10.0 p.c.; British Columbia, 9.6 p.c.; Ontario, 8.4 p.c.; and Quebec, 6.7 p.c. Gains for the remaining provinces were more modest: Manitoba, 4.3 p.c.; Newfoundland, 4.0 p.c.; Saskatchewan, 2.4 p.c.; and New Brunswick, 0.8 p.c. The last-named province, however, had shown a substantial gain in the preceding year. No data are yet available for Prince Edward Island.

Mention has already been made of the importance of capital expenditures and export demand in expanding manufacturing output in 1964. Capital expenditures for construction were estimated at \$7,011,000,000, and for machinery and equipment at \$3,816,000,000, for a total of \$10,827,000,000, compared with \$9,393,000,000 in 1963. An additional \$3,543,000,000 was expended for repairs, giving a combined capital and repair expenditure program of \$14,370,000,000.

The effect of export demand on manufacturing output is indicated by the increase of almost 14 p.c. in exports of fabricated materials in 1964 to \$3,714,300,000 from \$3,265,200,000 in 1963 and by the fact that thirteen of the leading 20 export commodities of all types were products of the manufacturing industries. Occupying second, third and fourth places, respectively, were newsprint paper, valued at \$834,646,000; wood pulp, \$460,854,000; and softwood lumber, \$449,732,000. Other manufactured commodities exported, each with values exceeding \$100,000,000, were aluminum and alloys, aircraft and parts, nickel and alloys, copper and alloys, farm equipment and machinery,



*The first Canadian-designed-and-built vertical take-off-and-landing aircraft made its initial flight in 1965. It was built under a joint Canadair-Federal Government development program.*

whisky and wheat flour. Outstanding in their increases over 1963 were aircraft and parts which, at \$248,785,000, were more than double the 1963 total of \$108,292,000 and wheat flour, at \$100,659,000, compared with \$62,616,000 in 1963. In the case of aircraft and parts, the increase was largely due to deliveries against a large order of F104G fighter aircraft, while the special contract with the USSR for flour was the main reason for the sharp increase in its export shipments.

### *High Level for Third Year*

The high level of manufacturing activity experienced in 1964 represents the third consecutive year in which substantial advances have been made. In terms of physical volume, output increased by 7.8 p.c. from 1961 to 1962, by 5.5 p.c. from 1962 to 1963, and by 8.3 p.c. from 1963 to 1964. Selling value of factory shipments advanced by 9.9 p.c., 8.3 p.c., and 7.7 p.c., respectively, during the same period, while employment rose by 2.8 p.c., 3.0 p.c., and 4.6 p.c., and salaries and wages by 7.0 p.c., 5.7 p.c., and 6.8 p.c., respectively. Although such a strong and sustained advance has not always characterized the growth of Canadian manufacturing, the long-term growth, especially in the post-World War II period, as shown in the accompanying table, has been remarkable. The data for selected years from 1917, the first year for which an annual Census of Manufactures was conducted, to 1962, inclusive, are based on the annual Census of Manufactures; those for 1963 and 1964 are based on monthly surveys and are thus considered preliminary.

**Manufacturing Statistics, Selected Years, 1917 to 1964**

Year	Employees	Salaries and Wages	Value Added by Manufacture	Selling Value of Factory Shipments <sup>1</sup>
	No.	\$'000	\$'000	\$'000
1917.....	606,523	497,802	1,281,132	2,820,811
1920.....	598,893	717,494	1,621,273	3,706,545
1929.....	666,531	777,291	1,755,387	3,883,446
1933.....	468,658	436,248	919,671	1,954,076
1939.....	658,114	737,811	1,531,052	3,474,784
1944.....	1,222,882	2,029,621	4,015,776	9,073,693
1949.....	1,171,207	2,591,891	5,330,566	12,479,593
1953.....	1,327,451	3,957,018	7,993,069	17,785,417
1954.....	1,267,966	3,896,688	7,902,124	17,554,528
1955.....	1,298,461	4,142,410	8,753,450	19,513,934
1956.....	1,353,020	4,570,692	9,605,425	21,636,749
1957.....	1,340,948	4,778,040		21,452,343
1958.....	1,272,686	4,758,614	9,454,954	21,434,815
1959.....	1,287,810	5,030,132	10,154,277	22,830,836
1960.....	1,275,476	5,150,503	10,380,148	23,279,804
1961.....	1,353,315	5,705,573	10,690,057	24,310,184
1962.....	1,391,426	6,102,995	11,741,066	26,712,995
1963.....	1,433,000 <sup>2</sup>	6,451,000 <sup>3</sup>	12,703,000 <sup>4</sup>	28,935,716 <sup>5</sup>
1964.....	1,499,000 <sup>2</sup>	6,981,000 <sup>3</sup>	13,684,000 <sup>4</sup>	31,171,694 <sup>5</sup>

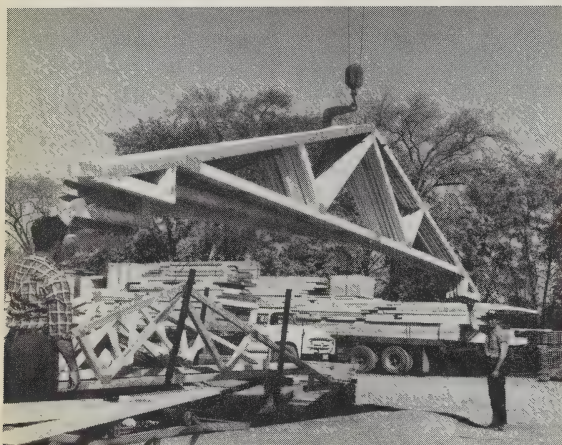
<sup>1</sup> Prior to 1953, data represent gross value of production.

<sup>2</sup> Based on current data as published in "Estimates of Employees by Province and Industry".

<sup>3</sup> Based on current data as published in "Estimates of Labour Income".

<sup>4</sup> Estimated on the basis of the ratio of "value added by manufacture" to "selling value of factory shipments" in 1962.

<sup>5</sup> Based on the monthly survey of shipments by manufacturers.



*Factory-built quality homes are among the new Canadian export commodities. A consignment was recently shipped to Germany. Domestic exports in 1964 reached a value of more than eight billion dollars, the highest ever recorded in Canadian trade.*

At the time of publication, the latest data available from the annual Census of Manufactures were for 1962. The Census, applicable to all manufacturing establishments in the country, covers a wide range of input and output data, including employment, salaries and wages, cost of materials, fuel and electricity used, value of shipments of goods of own manufacture, and inventories.

In 1962 new records were established for all five major dollar measures: salaries and wages, \$6,103,000,000, (up 7.0 p.c. over figures for 1961); cost of fuel and electricity, \$539,000,000 (up 4.7 p.c.); cost of materials and supplies used, \$14,596,000,000 (up 10.6 p.c.); value of shipments of goods of own manufacture, \$26,713,000,000 (up 9.9 p.c.); and value added by manufacture, \$11,741,000,000 (up 9.8 p.c.). The number of establishments, at 33,430, was only marginally greater than the 1961 total of 33,352, but the total number of employees, at 1,391,426, represented an increase of 2.8 p.c. over the 1961 total of 1,353,315.

### *Ontario Leads in Manufacturing*

On a regional basis, Ontario continued to dominate the Canadian manufacturing scene in 1962, with its value of shipments of goods of own manufacture of \$13,343,000,000 accounting for half the Canada total and representing an increase of 11.0 p.c. over that of 1961. Quebec's shipments of \$7,936,000,000 represented 29.7 p.c. of the total and were up by 8.3 p.c. over its 1961 total. The Prairie Provinces, with shipments of \$2,229,000,000, accounted for 8.3 p.c.; British Columbia's \$2,195,000,000 for 8.2 p.c.; and the Atlantic Provinces' \$1,007,000,000 for 3.8 p.c. of the total. On an individual province basis, the largest proportional increases over 1961 shipments were registered by Prince Edward Island, 14.8 p.c.; Nova Scotia, 11.8 p.c.; Manitoba, 11.2 p.c.; Ontario, 11.0 p.c. and British Columbia, 10.6 p.c. The smallest rates of increase were realized in New Brunswick, with 2.7 p.c.; the Yukon and Northwest Territories, 4.5 p.c.; and Newfoundland, 5.9 p.c.

On the basis of the value of shipments of goods of own manufacture, nine industry groups each accounted for more than \$1,000,000,000 of the total of \$26,713,000,000. The food and beverage industries, with total shipments of \$5,375,000,000, accounted for 20.1 p.c. of the total, followed by the primary metal industries with \$2,969,000,000 (11.1 p.c.); the transportation equipment industries, \$2,344,000,000 (8.8 p.c.); the paper and allied industries, \$2,334,000,000 (8.7 p.c.); and the metal fabricating industries, \$1,723,000,000 (6.4 p.c.). These were also the leading five industry groups in their contribution to "value added", although the relative positions of the transportation equipment industries and paper and allied industries were interchanged in the latter category. Contributions of these five groups to the total "value added" figure of \$11,741,000,000, with proportions of the total in parentheses, are as follows: food and beverage industries, \$1,818,000,000 (15.5 p.c.); primary metal industries, \$1,209,000,000 (10.3 p.c.); paper and allied industries, \$1,131,000,000 (9.6 p.c.); transportation equipment industries, \$949,000,000 (8.1 p.c.); and metal fabricating industries, \$855,000,000 (7.3 p.c.).

In terms of the selling value of factory shipments, pulp and paper mills maintained their position as the leading individual industry, with total shipments in 1962 of \$1,716,000,000. Other industries with shipments in excess of \$1,000,000,000 in 1962 were smelting and refining, \$1,549,000,000; petroleum refining, \$1,253,000,000; motor vehicle manufacturing, \$1,180,000,000; slaughtering and meat packing plants, \$1,142,000,000. The five leading industries on the basis of value added by manufacture were pulp and paper mills, \$880,000,000; smelting and refining, \$587,000,000; iron and steel mills, \$445,000,000; motor vehicle manufactures, \$384,000,000; and printing and publishing, \$286,000,000.



*A plant in Medicine Hat, Alberta, shows the processing of tires.*



*Fiberglass boats are manufactured in Edmonton, Alberta, as well as in many other ship-building centres of Canada.*

### Manufacturing Statistics, by Province and Industry Group, 1962

Province and Industry Group	Employees	Salaries and Wages	Value Added By Manufacture	Selling Value of Factory Shipments
	No.	\$'000	\$'000	\$'000
<b>Province</b>				
Newfoundland .....	9,920	37,457	72,829	143,925
Prince Edward Island .....	1,834	4,849	9,868	35,130
Nova Scotia .....	29,427	103,123	174,613	426,677
New Brunswick .....	23,417	83,203	160,455	401,142
Quebec .....	460,889	1,887,095	3,465,633	7,936,346
Ontario .....	662,747	3,078,766	6,006,765	13,342,557
Manitoba .....	41,983	167,302	369,607	836,573
Saskatchewan .....	13,679	57,632	125,388	375,223
Alberta .....	41,881	181,408	373,998	1,017,236
British Columbia .....	105,496	501,435	980,705	2,194,599
Yukon and N.W.T. ....	153	725	1,206	3,588
<b>Canada .....</b>	<b>1,391,426</b>	<b>6,102,995</b>	<b>11,741,066</b>	<b>26,712,995</b>
<b>Industry Group</b>				
Food and beverage industries.	210,156	816,762	1,817,723	5,375,339
Tobacco products industries..	11,149	47,614	125,887	346,570
Rubber industries .....	22,788	104,203	180,528	353,962
Leather industries .....	32,960	100,425	145,960	309,178
Textile industries .....	67,810	242,457	439,836	982,129
Knitting mills .....	22,962	64,303	103,112	233,506
Clothing industries .....	91,730	265,693	402,349	860,477
Wood industries .....	83,468	311,982	510,470	1,154,377
Furniture and fixture industries.	34,362	125,172	198,655	386,569
Paper and allied industries..	100,710	520,078	1,130,652	2,333,578
Printing, publishing and allied industries .....	75,601	361,468	626,513	925,443
Primary metal industries .....	91,923	498,154	1,209,123	2,969,096
Metal fabricating industries (except machinery and transportation equipment industries) .....	109,472	508,623	854,992	1,722,554
Machinery industries (except electrical machinery) .....	54,570	272,434	397,144	750,248
Transportation equipment industries .....	104,850	549,635	948,564	2,343,690
Electrical products industries.	96,595	453,357	735,460	1,389,382
Non-metallic mineral products industries .....	45,495	210,094	435,667	771,771
Petroleum and coal products industries .....	16,277	104,410	283,292	1,294,070
Chemical and chemical products industries .....	63,905	332,577	825,105	1,543,593
Miscellaneous manufacturing industries .....	54,643	213,554	370,033	667,462



*Edmonton, capital of Alberta, has had a tremendous growth since 1950 due to the development of the oil fields. It is situated in a rich agricultural area and is a distributing centre for northern and central Alberta.*

## Domestic Trade

# Provides Varied Employment

The distribution of goods from producer, manufacturer or importer to the final user is a complicated and competitive system involving storage and transportation, packing and re-packing, display and selling—all of which gives employment to many thousands of persons. Ancillary activities include the paper bag and box industry, advertising in all media, shopping centre developments, etc.

The bulk of the distribution of consumer goods flows through recognized retail outlets. In 1962, sales of retail stores were estimated at \$17,886,250,000. Although much of this total had passed through wholesale establishments, a good portion by-passed the wholesaler. Large retail organizations such as department stores and chain stores buy many items directly from manufacturer and producer and, on occasion, directly from foreign suppliers. Most of the commercial goods and supplies such as machinery and equipment are sold to the final user by firms classified as wholesale.

## *Three Important Retail Changes*

In recent years three important changes have been evident in the retail sector. Shopping centres steadily advanced to the point where they numbered 305 in 1962 with sales totalling \$1,172,112,186 or 6.6 per cent of all retail trade. If retailers not common to shopping centres are excluded from total sales (motor vehicle dealers, lumber dealers, farm supply stores) the retail business

transacted in shopping centres accounts for 8.8 per cent of all stores.

A second major development which is continuing in growth is that of the voluntary group stores, most prominent in the food trades. These stores, generally organized by supplying wholesalers to meet chain store competition, were approximately 11,000 in number in 1963 although the degree of affiliation varies between trades and between the sponsoring firms within trades.

A third and more recent development is that of the "discount department store". In 1963, sales of this group totalled \$141,235,754 amounting to 8.6 per cent of the \$1,648,014,000 sales of traditional department stores. In the first half of 1964 their rate of growth in dollar sales was 29 per cent above the same period of 1963 compared with an increase of 10 per cent for the traditional department stores.

Sales to the household consumer or individual for personal use are not all accounted for by retail stores. Direct selling, measured to a considerable extent in 1961, amounted to approximately \$700 million. This area of selling includes door to door selling, sales made directly to the household consumer by manufacturers, (bakeries, dairies, newspaper publishers, etc.) and sales by mail from such sources as book clubs, record clubs, magazines, etc. In addition, vending machine operators sold merchandise through their machines located in a variety of premises to the extent of \$57,799,175 in 1962. Almost 60 per cent of this amount was tobacco products.

## Service Industries

The service trades are becoming a more important factor in the Canadian economy. Hotels and motels comprise one of the largest service industries in Canada. Receipts of hotels have risen from \$357,000,000 in 1951 to \$588,000,000 in 1962. There has been a very large growth in coin-operated laundries, eating and drinking places, places of amusement and other kinds of businesses offering services hitherto performed by the householder. The number of power laundries and dry-cleaning plants have increased from 1,298 in 1951 to 2,123 in 1962 and receipts of these businesses have grown from about \$97,000,000 to \$183,000,000.

On the other hand, motion picture theatre business has fallen off during the period. In 1951, before the advent of television on a large scale in Canada, there were 1,808 regular auditorium type theatres and 82 drive-in theatres with total admissions of nearly 246,000,000. In 1963 there were 1,245 regular theatres and 241 drive-ins with only 97,888,272 admissions. Receipts fell from about \$94,000,000 in 1951 to \$72,000,000 in 1963.

## Co-operatives

The majority of Canadian co-operatives are owned, controlled, or operated by farmers and handle every major agricultural product. They operate under provincial legislation in each of the ten provinces except when operating on an interprovincial basis where special Federal legislation is required, or under the Companies Act.

The volume of business handled by Canada's 2,706 co-operatives during the year ended July 31, 1963 totalled \$1,656,700,000—an increase of 16.3 per cent over the previous year.



*A supermarket in Calgary, Alberta, reflects the popularity of such shopping centres in Canada. Plentiful parking spaces and a wide variety of goods attract customers.*

Marketing co-operatives, the largest part of the co-operative movement, reported sales of farm products amounting to \$1,109,800,000 or 67 per cent of the total sales of all types of co-operatives in Canada in 1963.

The main farm products marketed according to sales volume were grains and seeds \$524,400,000; dairy products \$253,200,000; and livestock and livestock products \$225,900,000. Sales of merchandise and supplies by marketing and purchasing co-operatives amounted to \$462,200,000. The main items in supplies were feed, fertilizer and spray material with sales valued at \$141,800,000 and food products with sales valued at \$124,300,000.

The co-operative movement's interest in urban consumers continues to gain momentum. The development of co-operative shopping centres, mainly in the Prairie Provinces, are outstanding examples of what co-operatives are doing in the consumer field. The five largest shopping centres are located at Winnipeg, Calgary, Regina, Saskatoon and Edmonton. Together they reported sales of about \$24 million in 1963.

In addition to the local co-operatives there are ten co-operative wholesale distributors serving co-operatives across Canada. These associations reported sales of \$358 million in 1963, an increase of 14 per cent over the 1962 figure.

Co-operatives are engaged in many enterprises which affect the daily lives of thousands of Canadians. Two of the more recent fields of co-operative expansion are the oil business and the chemical complex development. Consumers' Co-operative Refineries in Saskatchewan is the world's first co-operative petroleum refinery. It owns its own oil wells, operates the refinery and controls its own distribution system including retail service station outlets.

A co-operative chemical plant was opened in 1964 at Saskatoon, Saskatchewan. The main products produced at this plant are caustic soda, chlorine and basic chemicals used in the manufacture of farm herbicides and pesticides.

There are 14 Eskimo co-operatives in Canada's Northland, four in northern Quebec and 10 in the Northwest Territories. These associations are

mainly of the multi-purpose nature with special emphasis given handicrafts and graphic arts.

The Co-operative Union of Canada and Le Conseil Canadien de la Coopération are two important co-operative organizations with national interest in education and promotional work for co-operatives in Canada.

The Coady International Institute in Nova Scotia and the Western Co-operative College in Saskatchewan offer co-operative training for students from abroad. Western Co-operative College was organized mainly to train co-operative employees and directors. The Institute Desjardins at Lévis, Quebec, was recently organized to train co-operative personnel.

### Estimates of Wholesale Sales, 1960-63

(Millions of Dollars)

Kind of Business	1960	1961	1962	1963 <sup>1</sup>
Fresh fruits and vegetables.....	288.4	288.7	308.1	323.0
Groceries and food specialties.....	1,649.7	1,751.4	1,862.9	1,987.0
Meat and dairy products.....	165.0	175.0	173.5	172.6
Clothing and furnishings.....	116.1	116.6	102.8	105.0
Footwear.....	38.0	39.4	41.3	41.7
Other textile and clothing accessories.....	204.6	206.0	208.0	212.7
Coal and coke.....	153.3	140.6	139.8	151.0
Drugs and drug sundries.....	221.9	236.0	247.9	258.2
Newsprint, paper and paper products.....	276.4	291.6	308.8	325.0
Tobacco, confectionery and soft drinks.....	741.1	769.9	796.1	800.2
Automotive parts and accessories.....	414.8	414.4	441.4	457.0
Commercial, institutional and service equipment and supplies.....	137.4	140.4	139.3	140.9
Construction materials and supplies including lumber.....	877.6	894.0	954.5	1,021.4
Farm machinery.....	73.0	67.8	71.0	84.9
Hardware.....	327.1	350.7	357.0	355.7
Household electrical appliances.....	182.7	199.5	210.4	218.5
Industrial and transportation equipment and supplies.....	748.1	750.1	776.4	828.0
All other trades.....	2,149.3	2,204.5	2,501.3	2,698.8
<b>Totals.....</b>	<b>8,764.5</b>	<b>9,036.6</b>	<b>9,640.5</b>	<b>10,181.6</b>

<sup>1</sup> Preliminary.

*Smooth-flowing, spaced traffic in Toronto is achieved by a new computer-controlled traffic light system.*

*This is the heart of Toronto's traffic control centre. The new computer controls some 200 intersections.*



Estimated retail sales totalled \$18,752,000,000 in 1963, an amount 4.8 p.c. higher than the 1962 figure. Motor vehicle dealers registered the largest increase in sales from the previous year with a gain of 9.0 p.c.

### Retail Store Sales by Type of Business and by Province, 1961-63

(Millions of Dollars)

Type of Business and Province	Sales			Percentage Change
	1961	1962	1963 <sup>1</sup>	1962-63
<b>Type of Business</b>				
Grocery and combination stores.....	3,580.8	3,747.1	3,937.8	+5.1
Other food and beverage stores.....	1,243.8	1,343.9	1,386.3	+3.2
General stores.....	654.4	678.0	706.4	+4.2
Department stores.....	1,503.1	1,562.7	1,649.1	+5.5
Variety stores.....	371.2	391.3	405.7	+3.7
Motor vehicle dealers.....	2,488.3	2,764.2	3,011.8	+9.0
Garages and filling stations.....	1,212.0	1,306.5	1,329.8	+1.8
Men's clothing stores.....	260.7	281.1	293.5	+4.4
Family clothing stores.....	243.2	251.5	256.7	+2.1
Women's clothing stores.....	283.5	297.0	307.6	+3.6
Shoe stores.....	169.6	180.0	180.6	+0.3
Hardware stores.....	327.6	331.3	346.6	+4.6
Lumber and building material dealers.....	425.6	452.1	478.3	+5.8
Furniture, radio and appliance stores.....	548.2	572.9	581.0	+1.4
Restaurants.....	573.4	611.9	624.7	+2.1
Fuel dealers.....	317.4	359.5	360.8	+0.4
Drug stores.....	428.3	441.7	456.5	+3.4
All other stores.....	2,145.7	2,313.8	2,438.5	+5.4
<b>Totals.....</b>	<b>16,776.8</b>	<b>17,886.2</b>	<b>18,752.0</b>	<b>+4.8</b>
<b>Province</b>				
Atlantic Provinces.....	1,465.2	1,521.4	1,581.1	+3.9
Quebec.....	4,183.5	4,571.4	4,772.4	+4.4
Ontario.....	6,339.9	6,641.1	6,977.6	+5.1
Manitoba.....	817.0	873.1	905.9	+3.8
Saskatchewan.....	905.2	967.2	1,047.8	+8.3
Alberta.....	1,400.8	1,515.0	1,564.9	+3.3
British Columbia (incl. Yukon and N.W.T.)	1,665.2	1,797.1	1,902.3	+5.9

<sup>1</sup> Preliminary.

### Chain Store Statistics, 1955-63

Year	Stores	Retail Sales	Salaries of Store Employees	Stocks on Hand End of Year		Accounts Outstanding End of Year
				Store	Warehouse	
	Av. No.	\$'000	\$'000	\$'000	\$'000	\$'000
1955.....	8,274	2,353,955	199,611	205,833	63,120	127,362
1956.....	8,559	2,647,055	221,136	232,392	72,183	143,357
1957.....	8,822	2,841,569	242,979	248,284	78,521	148,506
1958.....	9,122	3,073,147	262,456	265,862	78,512	158,232
1959.....	9,491	3,280,263	285,691	282,530	80,440	162,453
1960.....	9,954	3,468,413	382,099	304,230	94,528	175,048
1961.....	9,683	3,494,026	348,591	284,606	71,957	126,607
1962.....	9,986	3,617,309	378,040	253,956	130,583	137,876
1963.....	10,306	3,837,285	395,048	316,407	76,101	143,393

Sales of new passenger cars reached an all-time high in dollar volume during 1963 with 557,787 units sold for a total of \$1,716,121,000. The financing

of new passenger vehicle sales by sales finance companies covered 30.1 p.c. of new car sales in 1963, the lowest proportion to date.

### New Passenger Car Sales and Financing, 1955-63

Year	Sold		Financed		P.C. of Total Sales Financed	
	No.	Retail Value	No.	Retail Value	No.	Value
		\$'000		\$'000		
1955.....	386,962	1,023,351	156,191	305,069	40.4	29.8
1956.....	408,233	1,128,640	190,109	408,993	46.6	36.2
1957.....	382,023	1,087,620	171,904	385,043	45.0	35.4
1958.....	376,723	1,110,724	147,402	335,827	39.1	30.2
1959.....	425,038	1,240,961	158,022	371,392	37.2	29.9
1960.....	447,771	1,289,073	164,335	377,851	36.7	29.3
1961.....	437,319	1,290,026	141,234	330,199	32.3	25.6
1962 <sup>1</sup> .....	502,565	1,482,407	154,561	380,879	30.8	25.7
1963.....	557,787	1,716,121	168,161	442,186	30.1	25.8

### Consumer Credit

Credit has become an integral part of the distribution of goods and services and of the buying habits of a large percentage of Canadians. The extension of credit to consumers, even as the extension of credit to businessmen, is the quickest means by which they can expand their assets. It is, in effect, a form of compulsory saving and a stimulus to industry.

Whether or not the securing of easy credit is an advantage to the individual, the fact remains that the amount of balances outstanding on the books of selected credit holders increased 100 p.c. in the period 1955 to 1963 while retail sales, the source of most of this credit, increased only 39 p.c. The following figures of credit outstanding do not include real estate credit or other avenues of credit such as that given by service trades, professionals, loans between individuals, etc.

### Balances Outstanding on Credit Extended 1955-64

(Estimates of selected items)

Date	Retail Dealers <sup>1</sup>	Finance and Loan Companies	Total	Cash Personal Loans <sup>2</sup>	Total Selected Items
(Millions of Dollars)					
1955 December 31.....	822	605	1,427	722	2,149
1956 ".....	872	769	1,641	789	2,430
1957 ".....	900	795	1,695	780	2,475
1958 ".....	937	787	1,724	947	2,671
1959 ".....	993	844	1,837	1,178	3,015
1960 ".....	1,038	873	1,911	1,375	3,286
1961 ".....	1,088	791	1,879	1,606	3,485
1962 ".....	1,125	816	1,941	1,854	3,795
1963 ".....	1,183	929	2,112	2,210	4,322
1964 March 31.....	1,094	932	2,026	2,272	4,298
June 30.....	1,113	1,011	2,124	2,483	4,607
September 30.....	1,119	1,039	2,158	2,574	4,732

<sup>1</sup> Includes both charges and instalment.

<sup>2</sup> Includes small loan companies cash loans, chartered banks personal loans (excluding fully secured and home improvement loans); Quebec Savings banks loans.

## Consumer Price Index

The Consumer Price Index measures the movement from month to month in retail prices of goods and services bought by a broad middle-income group of Canadian urban people. For a particular item, a price index number is simply the price of the item in one period of time expressed as a percentage of its price in a reference period, usually called a base period. However, indexes for individual goods may be combined to form indexes representing prices of broad groups of goods and services. Thus, the Consumer Price Index relates to the wide range of goods and services bought by Canadian urban families. The index expresses the combined prices of such goods monthly and annually as a percentage of their prices in the base period 1949.

The group of goods and services represented in the index is called the index "basket" and "weights" are assigned to the price indexes of individual items for purposes of combining them into an overall index. The weights reflect the relative importance of items in expenditures of middle size urban families with medium incomes. The basket is an unchanging or equivalent quantity and quality of goods and services. Only prices change from month to month and the index, therefore, measures the effect of changing prices on the cost of purchasing the fixed basket.

The basket and weights now used in the index are based on expenditures in 1957 of families of 2 to 6 persons, with incomes of \$2,500-\$7,000, living in cities of 30,000 population or over. The basket, weighted at 100, consists of the following components with their relative weights: food (27); housing, including shelter and household operation (32); clothing (11); transportation (12); health and personal care (7); recreation and reading (5); tobacco and alcohol (6).

### *Changes in Index, 1949-64*

Between 1949 and 1964 the Consumer Price Index rose 35.4 p.c. Over half of this increase occurred during two distinct periods, the Korean war (1951-52) and the investment boom of 1955-57. Between 1950 and 1952, the index rose from 102.9 to 116.5, or an increase of 13.2 p.c., while between 1955 and 1958, the index moved from 116.4 to 125.1, an increase of 7.5 p.c.

In 1964, the Consumer Price Index averaged 135.4, 1.8 p.c. above the 1963 average of 133.0. This increase was equal to the increase from 1962 to 1963. During 1964, all seven main components of the index advanced. The largest increases occurred in the Health and Personal Care, and Clothing indexes, which advanced 3.4 p.c. and 2.5 p.c., respectively. In the former, higher prices for prepaid medical care and personal services were mainly responsible for the change, with smaller increases for doctors' and dentists' fees, optical care, and personal supplies. Pharmaceutical prices remained at 1963 levels. In clothing, generally higher prices were recorded in all sub-groups—men's, women's and children's wear, footwear, jewellery, piece goods, and clothing services.

Increases of less than 2 p.c. were recorded in the remaining groups. The tobacco and alcohol, recreation and reading, food, and housing indexes moved up between 1.8 and 1.6 p.c. Increased provincial taxes and higher commodity prices combined to raise both the tobacco and alcohol components. In re-



*In the late fall of 1964, a rich iron ore deposit was found on Baffin Island. L. to r. are the discoverer, Murray Watts, and his pilot assistant, Ron Sheardown.*

creation and reading, higher prices for newspapers, admissions to theatres, televisions, and radios were chiefly responsible for the 1.7 p.c. increase. In food, price movements were mixed, with lower prices for eggs, sugar, and meats including beef, pork, and poultry but with higher prices for most other foods including dairy, bakery and cereal products, vegetables and fruit, sugar products, coffee, and restaurant meals. Most of the 1.6 p.c. increase in housing was caused by a rise in the home-ownership component of shelter with rent virtually unchanged. In the household operation component, while prices for household supplies and services, and home furnishings were up slightly from the previous year, the fuel and lighting index was slightly below its 1963 level.

The transportation index, which exhibited the least change of all the main groups between 1963 and 1964, moved up 1.1 p.c. Higher prices for automobile insurance, gasoline, motor oil, and licensing outweighed lower prices for new cars in the automobile operation component. Local bus fares were up slightly in the local transportation component, and the travel component decreased as a result of lower train fares.

### Consumer Price Index Numbers, 1949-64

(1949=100)

Year	Food	Housing	Clothing	Transportation	Health and Personal Care	Recreation and Reading	Tobacco and Alcohol	All Items
1949....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950....	102.6	104.1	99.7	105.4	101.8	102.0	102.7	102.9
1951....	117.0	113.7	109.8	113.0	111.0	109.7	111.5	113.7
1952....	116.8	118.0	111.8	117.4	117.8	115.7	113.3	116.5
1953....	112.6	120.0	110.1	119.2	120.1	116.7	108.0	115.5
1954....	112.2	121.6	109.4	120.0	124.5	119.5	107.3	116.2
1955....	112.1	122.4	108.0	118.5	126.7	122.6	107.4	116.4
1956....	113.4	124.2	108.6	123.3	130.0	125.3	107.7	118.1
1957....	118.6	126.7	108.5	129.9	138.2	129.8	109.4	121.9
1958....	122.1	129.0	109.7	133.8	145.4	138.4	110.6	125.1
1959....	121.1	131.4	109.9	138.4	150.2	141.7	114.0	126.5
1960....	122.2	132.7	110.9	140.3	154.5	144.3	115.8	128.0
1961....	124.0	133.2	112.5	140.6	155.3	146.1	116.3	129.2
1962....	126.2	134.8	113.5	140.4	158.3	147.3	117.8	130.7
1963....	130.3	136.2	116.3	140.4	162.4	149.3	118.1	133.0
1964....	132.4	138.4	119.2	142.0	168.0	151.8	120.2	135.4



*Pulp and paper are first among all industries in Canada in net value of shipments, in total wages paid and in capital invested. The industry provides more than 42 p.c. of the world's newsprint needs.*

## Foreign Trade

# Export Trade at Record High

The principal feature of Canada's foreign commerce during recent years has been the strong upward movement in both value and volume of goods exchanged with other countries. Since 1958, Canada's total external trade has risen continuously and in 1964, for the first time, the aggregate value of Canada's commerce with other nations exceeded 15 billion dollars. Total trade, total exports and imports all set new records and the merchandise balance of trade showed the highest export surplus reached in a peacetime year.

Canada's total foreign trade in 1964 was valued at \$15,793,400,000, an increase of 16.4 p.c. over the preceding year's figure of \$13,568,100,000. Domestic exports advanced to \$8,094,700,000, the highest ever recorded, and represented a rise of 19.1 p.c. over the previous peak of \$6,798,500,000, attained in 1963. This was the largest annual percentage gain since 1951 and marked the tenth successive year of export growth. As re-exports rose by 9.4 p.c., total exports increased to \$8,303,800,000 compared with \$6,989,700,000 in 1963, an advance of 18.8 p.c. Imports, which have been rising since 1961,

climbed to a new peak of \$7,489,600,000, greater by 13.9 p.c. than 1963's previous high of \$6,578,400,000. Exports have exceeded imports during the past four years and the export trade balance in 1964 of \$814,300,000, the largest since 1945, was nearly double that of \$411,400,000 for the preceding year.

The figures quoted above and the summary statistics of Canada's foreign trade since 1958 which appear in the table p. 135 for comparative purposes have been prepared on the new basis of "general trade" statistics introduced into Canadian records from January 1964. General trade imports include goods cleared by Customs on arrival, plus goods entered into customs warehouses without clearance. These totals thus vary somewhat from figures published in previous issues of the *Handbook* where imports were calculated on the "special trade" basis, i.e., goods cleared by Customs on arrival plus goods cleared from Customs' warehouses for use in Canada. General trade re-exports include both special trade re-exports and re-exports from Customs' warehouses. Domestic exports are the same on either basis. The changes mentioned cause minor variations in the figures for total trade and for the balance of trade, but reflect more accurately the actual movement of goods to and from the country within the year mentioned.



*An aqua-train service links British Columbia with Alaska. Exports of goods and services in Canada were up 15 p.c. in 1964.*

## Exports, Imports and Total Trade of Canada, 1958-64

(Millions of Dollars)

Calendar Years	Exports			Imports	Total Trade	Balance of Trade
	Domestic	Re-exports	Total			
1958.....	4,791.4	107.3	4,898.8	5,060.2	9,959.0	-161.4
1959.....	5,021.7	122.5	5,144.2	5,529.8	10,674.1	-385.6
1960.....	5,255.6	134.5	5,390.1	5,495.0	10,885.1	-105.0
1961.....	5,755.0	147.5	5,902.5	5,781.4	11,683.9	+121.1
1962.....	6,178.5	178.8	6,357.3	6,294.4	12,651.8	+62.9
1963.....	6,798.5	191.2	6,989.7	6,578.4	13,568.1	+411.4
1964.....	8,094.7	209.2	8,303.8	7,489.6	15,793.4	+814.3

## International Background

On the world scene, Canada stood in fifth place amongst the principal trading nations, according to 1963 total trade figures, the latest complete returns available. The United States was the leading country, followed by West Germany, Britain and France. Canada was next and preceded such other important traders as Italy, Japan and the Netherlands. On a per capita basis, Canada was ninth in total trade although seventh in exports. A comparison is given in the table below both under total value of trade and the amount per capita for each main nation.

### Leading Countries in World Trade, by Value of Trade and Trade per Capita, 1962 and 1963

Country	Exports f.o.b.		Imports c.i.f.		Total Trade	
	1962	1963	1962	1963	1962	1963
Value of Trade (Millions of U.S. dollars)						
World Trade <sup>1</sup> .....	124,600	135,700	132,100	142,990	256,700	278,690
United States.....	21,688 <sup>2</sup>	23,249 <sup>2</sup>	17,764	18,590	39,452 <sup>2</sup>	41,839 <sup>2</sup>
Germany, Federal Republic.....	13,267	14,621	12,289	13,022	25,556	27,643
Britain.....	11,058	11,857	12,563	13,497	23,621	25,354
France.....	7,363	8,085	7,517	8,727	14,880	16,812
Canada.....	6,231	6,779	6,367	6,618	12,598	13,397
Italy.....	4,666	5,047	6,067	7,539	10,733	12,586
Japan.....	4,917	5,453	5,637	6,737	10,554	12,190
Netherlands.....	4,584	4,961	5,347	5,966	9,931	10,927
Belgium and Luxembourg	4,332	4,839	4,569	5,112	8,901	9,951
Sweden.....	2,923	3,202	3,121	3,389	6,044	6,591
Trade per Capita <sup>3</sup> (U.S. dollars)						
Belgium and Luxembourg	454	503	479	532	933	1,035
Switzerland.....	395	416	538	560	933	976
Netherlands.....	389	415	453	499	842	913
Sweden.....	387	421	413	446	799	867
Denmark.....	359	407	458	454	816	862
Trinidad and Tobago....	393	405	402	408	795	813
Norway.....	267	293	457	497	724	789
New Zealand.....	321	359	303	356	624	714
Canada.....	336	359	343	350	678	709
Hong Kong.....	225	227	342	361	567	588

<sup>1</sup> World total exclusive of China, U.S.S.R. and those countries of Eastern Europe not reporting trade currently.

<sup>2</sup> Including military aid extended to other countries.

<sup>3</sup> Trading countries as listed by I.M.F. except that Aden, Netherlands Antilles and countries with neither exports nor imports of U.S. \$100,000,000 in 1963 were included.

Total world trade has continued to increase in recent years and expanded again in 1963 and 1964, particularly in the first half of the latter. There was greater economic activity among the industrial nations and, as there was a good demand for primary products with prices some 5 p.c. above 1963 levels, the developing countries also enjoyed reasonably favourable conditions. However, towards the end of 1964, because of over-expansion resulting in financial strain both the more advanced nations and the primary producing countries encountered some diminution in the rate of growth.

### *Regional Economic Groups*

Since Canadian exports must enter world markets on a competitive basis, developments among the various regional economic groups are of interest and the beginning of 1965 saw further reductions in internal tariffs between certain group members. The European Economic Community (EEC), composed of Belgium, France, the Federal Republic of Germany, Italy, Luxembourg, and the Netherlands, reduced internal customs duties by 10 p.c. with the result that from January 1, 1965, industrial products have been dutiable at 30 p.c. of the level applied to imports from non-members, certain liberalized agricultural products at 50 p.c. and others at 45 p.c. Countries associated with EEC, including some seventeen Central African states, Madagascar and Greece, also benefit. A common agricultural policy is being evolved and the member countries have, in general, taken two decisive steps towards a common external tariff through reducing by 60 p.c. the difference between their national, and the common, rates of duty.

The European Free Trade Association (EFTA), composed of Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom, also made a further 10 p.c. reduction on January 1, 1965, with the result that tariffs on industrial products and certain agricultural products from member countries are only 30 p.c. of the basic rates. Finland is an associate member and enjoys some of these concessions. Each country levies its own separate tariff against imports from non-members.

The members of the Latin American Free Trade Association (LAFTA), Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, and Uruguay, held their fourth session in Bogota, Colombia, in the late autumn of 1964 to negotiate further national lists of tariff concessions towards their general aim of abolishing, over a period of not more than twelve years, duties or barriers on substantially all products traded. Intra-zonal commerce has increased since the first concessions came into effect in 1962. New industries, or the expansion of existing ones, are to be encouraged as also the rationalization of the production of certain articles within a given region. Five countries of Central America—Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua—have formed the Central American Common Market. Under a 1960 treaty, these republics have agreed to eliminate internal customs barriers within five years and to establish a common external tariff on goods from other countries. These objectives have already been reached on many goods and intra-regional trade has strengthened considerably.

In May 1964, the nations, including Canada, associated in the General Agreement on Tariffs and Trade (GATT), began the Kennedy Round of trade

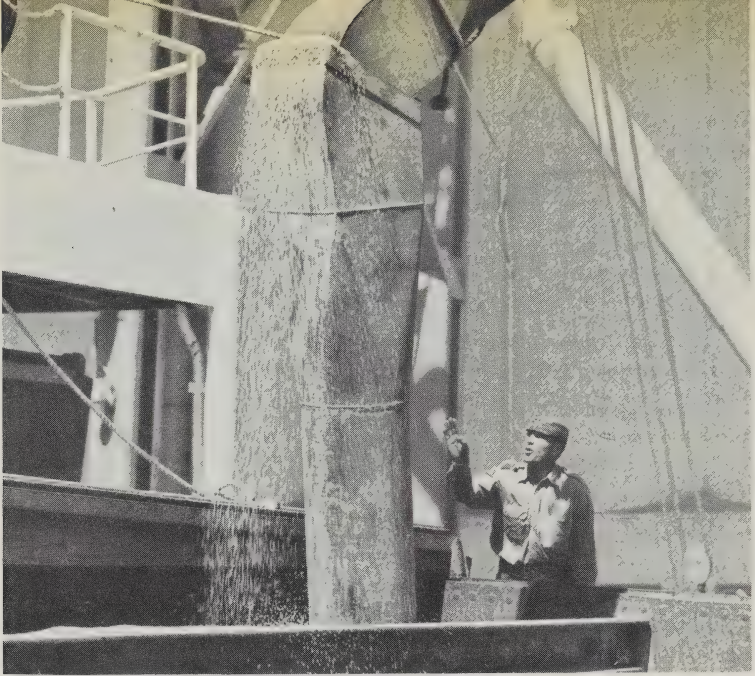
*Newsprint is loaded at Corner Brook, Newfoundland. More than five million tons were exported to the United States alone in 1963.*



negotiations which calls for a linear or across-the-board reduction in duties by the main industrialized countries. Discussions were temporarily frozen until agreement was reached to negotiate agricultural trade questions at the same time. Constructive talks resumed, various countries had presented lists of exceptions and Canada has tabled a list of proposed concessions.

The Ministerial Council of the Organization for Economic Co-operation and Development (OECD) held its annual meeting in Paris in December 1964. The OECD, which is composed of 18 European nations, United States, Canada, and recently, Japan, continued its efforts to encourage financial and economic growth by member countries and to alleviate trade and aid problems of the less-developed two-thirds of the world. The United Nations Conference on Trade and Development meeting in Geneva in March-June 1964, also focused attention on the needs of the developing countries.

The opening of new markets and the re-alignment of older ones are both of interest to Canadian traders. An increasing demand for traditional goods coupled with new outlets for capital goods, machinery, engineering specialties and other fully manufactured products appears likely. The Kennedy Round negotiations represent a far-reaching attack on international trade barriers and Canada would stand to gain considerably if substantial tariff concessions were forthcoming.



*Grain is poured into the hold of a freighter in Montreal. Canada exported more than 500 million bushels of wheat in 1964.*

## Canadian Trade Trends

Advances were made in 1964 in the shipments of practically all leading commodities, particularly of wheat, iron ore and aircraft and parts, to all principal trading areas, with the exceptions of the non-Commonwealth regions of Africa and the Middle East.

The increase in the value of Canadian export trade in 1964 over that in the preceding year was due almost entirely to the larger quantity of goods handled. Prices for export commodities remained relatively stable during the year, the average price index rising by less than 2 p.c. while the index of physical volume advanced by approximately 17 p.c. By stage of fabrication, it was the exports of fully-manufactured goods which showed the most notable improvement, their value in 1964 being more than double such shipments in 1960 and over a third above the 1963 level.

Exports of fabricated materials, the largest group, also rose considerably while those of crude materials advanced by nearly one-fifth. Imports, aided by increased demand for machinery, equipment and consumer's goods showed a rising trend and there were gains in practically all of the leading commodities and in total imports from main trading areas, except from the Middle East.

## Exports

Wheat, which in 1963 displaced newsprint as Canada's leading export, retained its premier position in 1964, shipments being valued at \$1,023,000,000, or 30 p.c. more than in the previous year. These included exports to Russia of \$276,000,000, nearly double the 1963 figure, \$116,700,000 to Communist China, \$55,400,000 to Poland, \$50,100,000 to Czechoslovakia and lesser but

important amounts to Bulgaria, Cuba and Albania. Britain was first in wheat exports to traditional markets, purchasing \$147,400,000 worth followed by Japan at \$105,200,000, West Germany at \$47,500,000, the Netherlands and Belgium. Venezuela and the Philippines also increased their intake of Canadian wheat considerably in 1964. Newsprint, wood pulp and lumber followed in descending order of value, exports of all three going mainly to the United States, with Britain in second place. Added amounts of newsprint were sent to Australia, the Republic of South Africa, Japan and Argentina. Wood pulp shipments increased to Japan, West Germany, and Argentina. Exports of lumber to Japan were less than in 1963, about the same to Australia, and more to France.

Iron ore was in fifth place with greatly increased shipments to the United States and Britain and somewhat less to Japan. Aluminum exports rose by 5 p.c., the United States, Britain, West Germany and Japan being the chief destinations. Petroleum exports advanced 12 p.c., while aircraft and parts more than doubled, mostly to the United States but with valuable sales to Australia and Iceland. Nickel and alloys went up by 12 p.c., the United States, Britain and Germany being the chief markets. Copper and alloys advanced by 14 p.c. with increased sales to Britain, the United States and France. Nickel ores and asbestos both rose over 11 p.c., whisky over 14 p.c. and farm machinery by nearly 24 p.c. Wheat flour shipments advanced by more than 60 p.c.; the U.S.S.R. was the chief purchaser obtaining over \$35,000,000 for itself and nearly \$15,000,000 for Cuba. Gains were also noticeable in Canada's exports of synthetic rubber and plastics, natural gas, fish, fertilizers and primary iron and steel.

### Principal Domestic Exports, 1960-64

Commodity <sup>1</sup>	Calendar Year				
	1960	1961	1962	1963	1964
	\$'000	\$'000	\$'000	\$'000	\$'000
Wheat.....	410,453	663,191	601,518	786,804	1,023,112
Newsprint paper.....	757,930	761,313	753,060	759,990	834,646
Wood pulp.....	325,122	346,661	369,902	405,292	460,854
Lumber, softwood.....	323,272	334,512	371,410	426,855	449,732
Iron ore and concentrates.....	157,814	142,566	220,522	270,949	356,007
Aluminum, including alloys.....	259,250	241,825	284,554	302,730	317,937
Petroleum, crude and partly refined..	94,450	152,334	232,497	233,867	262,023
Aircraft and parts.....	50,172	100,914	146,917	108,292	248,785
Nickel and alloys.....	146,143	191,647	191,556	175,368	197,145
Copper and alloys.....	193,247	178,320	163,931	166,517	190,363
Nickel in ores and concentrates.....	109,387	151,379	132,308	149,236	166,036
Asbestos, unmanufactured.....	120,113	131,341	135,637	139,447	155,706
Farm equipment (except tractors and parts).....	81,279	76,270	83,154	106,237	131,285
Whisky.....	79,220	80,397	84,885	90,125	102,820
Wheat flour.....	62,239	61,076	57,043	62,616	100,659
Synthetic rubber and plastics materials, not shaped.....	107,654	103,832	84,571	88,406	98,723
Natural gas.....	18,051	41,689	72,423	75,630	97,609
Fish, fresh and frozen.....	68,833	72,528	78,288	81,400	94,362
Fertilizers and fertilizer materials...	53,792	53,554	60,250	74,756	86,750
Primary iron and steel.....	53,349	52,232	45,878	59,540	76,410

<sup>1</sup> Commodities ranked by value of exports in 1964.



*While the production of frozen cod fillets has rapidly expanded in recent years, millions of pounds of salt cod are also exported to traditional markets. The Atlantic cod fishery in 1963 produced more than 609 million pounds.*

## Imports

Roughly half of all imports into Canada is made up of fully manufactured products ready for final use. As a composite item, non-farm machinery was the most important and arrivals rose by nearly 30 p.c. over the 1963 total. The trade in automobile parts was brisk as some of the effects of the arrangement to offset imports by increased exports were felt in the industry, imports advancing nearly 14 p.c.

Electrical apparatus and crude petroleum were in third and fourth places respectively with a slight rise in electrical apparatus imports and a small decline in petroleum arrivals. Good business conditions throughout the year encouraged added purchases of tractors, up 19 p.c., engines, up 34 p.c. and of cars and trucks which advanced by 40 p.c. while steel plate, sheet and strip rose over 50 p.c.

### Principal Imports, 1960-64

Commodity <sup>1</sup>	Calendar Year				
	1960	1961	1962	1963	1964
	\$'000	\$'000	\$'000	\$'000	\$'000
Machinery (non-farm) and parts.....	579,791	603,298	675,768	675,080	874,125
Automobile parts (except engines).....	296,571	304,487	392,687	489,057	555,456
Electrical apparatus, n.e.s.....	260,473	265,260	325,316	311,490	335,229
Petroleum, crude and partly refined....	283,172	291,170	304,898	334,761	320,637
Tractors and parts.....	131,541	136,014	140,287	183,732	220,342
Engines, except aircraft engines.....	90,903	86,987	121,677	143,781	193,014
Automobiles, freight and passenger....	243,363	183,653	178,955	116,649	163,776
Aircraft and parts.....	167,009	312,552	259,251	159,949	154,648
Farm equipment (except tractors) and parts.....	97,118	95,680	113,451	140,244	152,290
Plate, sheet and strip (steel).....	56,667	53,275	57,898	80,761	121,587
Fruits and berries, fresh or chilled....	93,022	97,971	99,493	102,653	114,519
Sugar, unrefined.....	50,677	52,729	56,926	126,735	102,427
Scientific and educational equipment...	53,931	66,765	72,640	83,218	100,029
Glass and glassware.....	57,917	67,074	78,720	77,086	88,957
Coal.....	76,961	71,560	74,171	78,632	86,241
Coffee.....	56,569	59,328	62,180	65,297	82,620
Apparel and apparel accessories.....	72,019	75,962	71,728	67,923	79,971
Cotton fabrics.....	75,150	77,207	72,861	68,077	78,056
Fuel oils.....	66,853	60,659	60,159	65,282	76,497
Aluminum ores and concentrates.....	45,255	58,130	62,277	67,149	70,424

<sup>1</sup> Commodities ranked by value of imports in 1964.

Imports of aircraft and parts were slightly less and farm equipment purchases moved up nearly 9 p.c. Arrivals of fresh fruits and berries have increased continuously in recent years and were almost 12 p.c. over the 1963 total. Sugar, which rose substantially in price in 1963 declined to a lower level in 1964; also there was a drop in the volume of imports, so that the total value was approximately one-fifth less.

Scientific and educational equipment rose by over 20 p.c. and completes the list of foregoing imports whose individual values exceeded \$100,000,000 in 1964. Other leading imports such as glass, coffee, apparel, cotton fabrics and fuel oils increased substantially while smaller advances were recorded for coal and aluminum.

## Leading Trade Partners

Canada and United States are one another's best customer. The United States purchased almost 53 p.c. of all Canadian exports and supplied around 69 p.c. of imports. The United Kingdom is second, buying roughly 15 p.c. of our exports and sending 8 p.c. of imports. The next largest market for Canadian exports was Japan, closely followed in 1964 by the U.S.S.R. owing mainly to the massive wheat sales to that country. Venezuela came after the U.K. as a supplier of imports and Japan was next. West Germany was both the fifth most important customer and supplier.

Taken in descending order, Australia, Communist China, the Netherlands and Belgium and Luxembourg were each the destination of over \$100,000,000 of Canadian goods in 1964. A further ten countries each accepted from \$79,000,000 to \$54,000,000 of Canadian exports. In imports, the individual country totals were considerably less and the remaining fifteen of the twenty leading suppliers sent imports valued in a range of \$69,000,000 to \$28,000,000 in 1964.

## Domestic Exports by Leading Countries, 1960-64

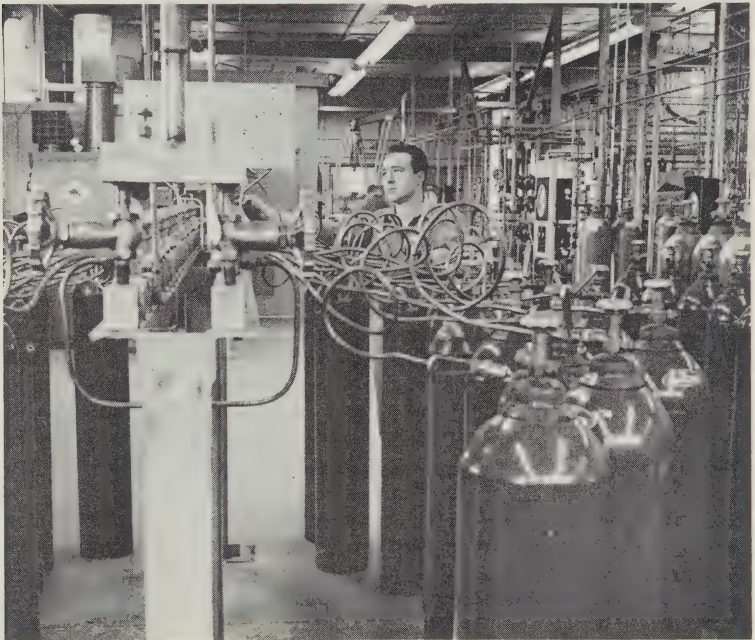
Country <sup>1</sup>	Calendar Year				
	1960	1961	1962	1963	1964
	\$'000	\$'000	\$'000	\$'000	\$'000
United States.....	2,932,171	3,107,176	3,608,439	3,766,380	4,271,059
Britain.....	915,290	909,344	909,041	1,006,838	1,199,779
Japan.....	178,859	231,574	214,535	296,010	330,234
Union of Soviet Socialist Republics	8,233	24,276	3,297	150,123	315,943
Germany, Federal Republic.....	165,597	188,694	177,688	170,969	211,501
Australia.....	98,862	78,628	104,965	100,773	145,812
China, Communist.....	8,737	125,448	147,438	104,738	136,264
Netherlands.....	62,554	61,297	76,940	87,009	101,582
Belgium and Luxembourg.....	69,131	76,055	68,169	76,493	100,535
France.....	72,907	71,923	57,561	63,428	79,433
Republic of South Africa.....	52,655	37,819	37,525	60,299	69,166
Norway.....	61,595	69,744	69,054	73,398	67,582
Mexico.....	38,023	38,529	41,267	55,572	65,151
Venezuela.....	35,345	34,978	40,328	46,328	64,075
India.....	37,199	43,330	29,633	53,900	64,042
Poland.....	16,665	36,819	37,391	27,200	62,653
Italy.....	68,393	67,688	74,521	76,761	62,236
Cuba.....	13,038	31,104	10,878	16,433	60,930
Czechoslovakia.....	6,767	32,654	3,522	13,289	54,230
New Zealand.....	23,858	31,125	26,784	30,549	33,714

<sup>1</sup> Countries ranked by value of exports in 1964.

## Imports by Leading Countries, 1960-64

Country <sup>1</sup>	Calendar Year				
	1960	1961	1962	1963	1964
	\$'000	\$'000	\$'000	\$'000	\$'000
United States.....	3,688,865	3,869,559	4,306,463	4,458,050	5,164,402
Britain.....	588,962	619,962	568,822	525,875	574,107
Venezuela.....	195,189	216,640	224,236	243,495	270,621
Japan.....	113,102	116,580	129,565	129,331	174,381
Germany, Federal Republic.....	127,371	136,879	143,729	143,840	170,379
France.....	49,717	55,629	57,075	57,254	69,011
Italy.....	42,939	49,462	53,041	56,169	67,478
Australia.....	35,868	37,305	46,761	53,914	59,992
Belgium and Luxembourg.....	41,449	44,796	48,875	47,540	59,188
Jamaica.....	38,945	38,705	38,622	53,526	47,831
Netherlands.....	31,464	33,698	37,996	36,864	39,933
Brazil.....	24,930	29,101	31,916	36,250	39,533
Sweden.....	20,546	24,663	25,908	33,362	38,794
Switzerland.....	24,614	26,888	31,576	32,042	36,947
India.....	29,356	33,433	46,155	53,273	36,121
British Guiana.....	19,428	22,025	24,352	35,003	35,653
Netherlands Antilles.....	32,493	31,204	35,834	36,000	34,885
Malaysia.....	28,380	23,894	28,251	31,634	34,536
Iran.....	30,744	21,622	31,736	42,799	31,185
Republic of South Africa.....	11,656	12,334	16,951	31,593	28,798

<sup>1</sup> Countries ranked by value of imports in 1964.



*A technician fills helium cylinders for export. The only helium plant in the western world outside the U.S. is in Swift Current, Sask. It went into full production in 1964, thus easing a critical world shortage of this rare gas which is used in space vehicles, industry and medicine.*

## Travel Industry

Travel between Canada and other countries underwent a significant change in 1963. From 1951 to 1962, travel expenditures had led to a net loss of foreign exchange for Canada with Canadians spending more abroad than foreign visitors spent in Canada. In 1963, however, Canada's international travel account went into the "black" for the first time since 1950 as Canada earned a \$24,000,000 balance of payments surplus on travel account with all countries.

This surplus was exceptional and the pattern of deficits was re-established in 1964. The 1963 results arose from a \$161,000,000 credit balance with the United States and a \$137,000,000 deficit with other countries.

### Balance of Payments on Travel Accounts

(Millions of Dollars)

Item	1959	1960	1961	1962	1963
<b>Account with the United States:</b>					
Credits.....	351	375	435	512	549
Debits.....	448	462	459	419	388
Net.....	- 97	- 87	- 24	+ 93	+161
<b>Account with overseas countries:</b>					
Credits.....	40	45	47	50	60
Debits.....	150	165	183	186	197
Net.....	-110	-120	-136	-136	-137
<b>Account with all countries:</b>					
Credits.....	391	420	482	562	609
Debits.....	598	627	642	605	585
Net.....	-207	-207	-160	- 43	+ 24

The volume of travel between Canada and other countries increased in 1963 to more than 61,500,000 visits. Canadians returning direct from trips to overseas countries numbered 282,057, an increase of 28,657 re-entries and the number of Canadian residents who visited the United States rose by 1,445,200 or about five p.c. United States residents entering Canada during 1963 advanced by 208,400 or 0.7 p.c. and non-immigrants arriving direct from overseas countries during the last nine months of 1963 totalled 76,370 persons.

Estimated receipts from non-resident travel in Canada reached a record high of \$609,000,000 in 1963, between eight and nine p.c. more than in 1962. Canadians visiting countries outside Canada spent an estimated \$585,000,000 during 1963, a drop of \$20,000,000 in comparison with 1962. This marked the second year in a row that Canadian expenditures on foreign travel had fallen. The net result of these overall receipts and expenditures was a \$24,000,000 balance of payments surplus on travel account with all countries compared with a \$43,000,000 deficit in the previous year.

By far the greatest exchange of travel is with the United States. Total border crossings between the two countries amounted to 61,254,600 in 1963 compared with 59,601,000 in 1962. United States visitors entering Canada in 1963 numbered 31,864,800, up 208,400 from the previous year. Canadian re-entries from the United States also showed an increase, advancing by 1,445,200 to 29,389,800.

A substantial part of this traffic between Canada and the United States is of a short-term nature. Some 21,498,800 United States residents, or 67.5 p.c. of the total volume of Americans visiting Canada during 1963, entered and left Canada on the same day. On the other hand, the number of American visitors remaining one or more nights amounted to 10,366,000 or between 32 and 33 p.c. of the total.

Canadian travel to the United States follows somewhat the same pattern. Short-term visits by Canadians to the United States in 1963 totalled 24,413,300 which represents roughly 83 p.c. of the total Canadian traffic to that country, and the number of Canadians remaining one or more nights in the United States amounted to 4,976,500, about 17 p.c. of the total. This high proportion of short-term travel between the two countries reflects the relative ease of crossing the border (no passport or visa is required) as well as the proximity

*Improved transportation facilities are bringing an increasing number of tourists into the north. Construction will begin this year on a major new highway in the Yukon. In 1964 rail services were extended into the Northwest Territories. Displays of N.W.T. travel information were installed in 1965 at airports in Toronto and Ottawa.*





*Along the Mackenzie Highway, south of Hay River, Northwest Territories, is beautiful Alexandra Falls, a foremost attraction to visitors. The river falls 109 feet at this point.*

on both sides of the border of heavily populated areas, particularly in Ontario and the American northeast and mid-west states.

The automobile continues to be the most popular form of transportation between the two countries. In 1963, some 25,130,200 United States residents travelled to Canada by automobile—nearly 79 per cent of the total American traffic to Canada. Similarly, of the total number of Canadians visiting the United States in 1963, 23,046,300 or between 78 and 79 p.c. travelled by automobile.

Total United States automobile traffic to Canada in 1963 represented an increase of 528,800 or 2.2 p.c. in comparison with the previous year; the increase in the volume of Canadian automobile traffic to the United States amounted to 692,400 re-entries or 3.1 p.c.

The volume of United States non-automobile traffic to Canada declined by 320,400 entries or 4.5 p.c. to 6,734,600, in 1963. Large decreases in the volume of rail, boat, and "other" travellers, which were only partially offset by gains in plane and bus travel, were mainly responsible for the decline.

Non-automobile traffic from Canada to the United States experienced an increase, as re-entries in this category advanced from 5,590,700 to 6,343,500. A large part of this increase was due to a substantial gain in the number of "other" travellers which consists of pedestrians, local bus commuters, etc.

### *U.S. Tourist Spending in Canada*

Expenditures by residents of the United States travelling in Canada during 1963 are estimated at \$549,000,000, an increase of some \$37,000,000 or about 7 p.c. over the corresponding 1962 estimate.



*Metropolitan Winnipeg, Manitoba, is a manufacturing, distributing and transportation centre. It had a population of approximately 487,000 in 1964.*

Short-term visitors, although constituting between 67 and 68 p.c. of the total volume of Americans entering Canada in 1963, accounted for only \$59,830,000 or 11 p.c. of the total expenditures. On the other hand United States visitors classified as long-term, while representing only about 33 p.c. of the total entries, contributed \$489,041,000, which represents approximately 89 p.c. of the total receipts from the United States.

American automobile travellers who entered and left Canada on the same day spent an estimated \$32,100,000 or about six p.c. of the total while estimated expenditures by long-term American automobile entries amounted to \$328,800,000, or close to 60 p.c. of the total expenditures. Non-automobile traffic from the United States contributed \$187,900,000 or about 34 p.c. of the total.

### *Canadian Tourists in the U.S.*

Although the number of Canadian residents returning from trips to the United States (exclusive of Hawaii) advanced by 1,445,200 or 5.2 p.c. over 1962, estimated Canadian travel expenditures in that country fell by \$30,000,000 or between 7 and 8 p.c. to \$384,000,000 in 1963. Apparently the devaluation of the Canadian dollar in May 1962, and the reduction in the value of merchandise exempt from customs duty from \$100 to \$25 every four months, effective in late June 1962, still exerted considerable downward pressure on Canadian spending in the United States during 1963.

Canadian travellers who entered and left the United States on the same day, while constituting 83 p.c. of the total Canadian traffic movement to the United States, accounted for just \$53,900,000 or 14 per cent of the total expenditures. In contrast, Canadians who remained one or more nights in the



*Her Majesty Queen Elizabeth inspects the Guard of Honour, Charlottetown, P.E.I., during her 1964 visit.*

United States are estimated to have spent \$329,700,000 which represents close to 86 p.c. of the total expenditures in the United States. Yet, this group of travellers constituted only about 17 per cent of the total volume.

Estimated payments by Canadian automobile travellers to the United States fell from \$203,000,000 to \$195,000,000 in 1963. Payments by non-automobile travellers to the United States also showed a decline, dropping from \$211,000,000 in 1962 to \$189,000,000 in 1963. Expenditures by automobile travellers represent close to 51 p.c. of the total and disbursements by the non-automobile group amounted to roughly 49 p.c. of the total expenditures in the United States during 1963.

### *Canadian Tourists Overseas*

The pattern of travel between Canada and overseas countries is somewhat different from that between Canada and the United States. Although the number of persons travelling between Canada and overseas countries usually represents less than one p.c. of the total traffic movement, expenditures involved are relatively high compared with travel between Canada and the United States.

Overseas travellers spend substantial amounts to cover the cost of oceanic transportation and the average duration of stay is much longer than trips involved between Canada and the United States, thereby adding to the amount spent on lodging, meals, entertainment, etc. Then, too, this segment of travel has become increasingly important during recent years.

Rising incomes, increased leisure time and lowering cost of transoceanic transportation have resulted in more Canadians taking their holidays overseas. For example, the number of Canadians visiting countries other than the United States increased from about 80,500 in 1953 to 342,100 in 1963, representing an advance of some 325 p.c.

At the same time, Canadian expenditures in overseas countries have increased from \$58,000,000 in 1953 (representing close to 16 per cent of total Canadian travel expenditures abroad) to \$197,000,000 in 1963, or 34 p.c. of the total expenditures. In comparison with 1962, the volume of Canadian

travel to overseas countries increased by roughly 31,000 or about 10 p.c., while their expenditures advanced by \$11,000,000 or six p.c.

Receipts from visitors residing in countries other than the United States are estimated at \$60,000,000, marking an increase of \$10,000,000 or 20 p.c. over the previous year. The deficit on travel account with overseas countries came to \$137,000,000 in 1963, slightly higher than the \$136,000,000 imbalance in the previous year.

### *Exceeded only by Wheat and Newsprint*

The travel industry has become of growing importance to the Canadian economy and to Canada's balance of international payments. Foreign spending in Canada is often a major source of income of many businesses providing services to foreign visitors and the prosperity of many a region in Canada is dependent upon this source of revenue.

When one considers foreign travel expenditures in Canada as a source of export income, travel earned over \$600,000,000 for Canada during 1963, exceeded only by the export of wheat valued at \$787,000,000 and newsprint which earned \$760,000,000. Recognizing the increasing importance of the travel industry to the Canadian economy, both the federal and provincial levels of governments are, through their respective tourist bureaux, actively engaged in stimulating, encouraging and promoting foreign travel to Canada.

## **Balance of International Payments**

Every hour of every day, commodities are in transit into and out of Canada by train, truck, ship, aircraft and pipeline. To supply their everyday needs, Canadians depend on the labour and products of countries in every part of the world.

While this great stream of goods, services and savings is flowing into Canada, an important although smaller flow of goods, services and savings is moving outward.

Great as is the two-way traffic in merchandise, it has accounted in recent years for less than half Canada's international transactions. Canadians earn substantial amounts from the provision of services and savings to non-residents, and there are even greater payments by Canada for similar services and savings provided by non-residents. In addition to these international exchanges, which currently equal about \$900 per year for every Canadian, there is a vast amount of investment, borrowing and lending between Canada and other countries.

### *Foreign Capital in Canada*

Canadian purchases from non-residents of goods and services have persistently exceeded sales by a sizable margin. This imbalance has been made possible by very large inflows of foreign capital for investment in Canadian industry and, at times, by heavy borrowings by provinces and municipalities. These inflows have been associated with growth and development and have, in turn, stimulated demands for larger purchases of foreign goods and services.

There have been deficits with one exception each year since 1950, and they



*Workers check new cars at a Dartmouth, Nova Scotia, plant, established by Swedish capital. Outlays for business capital goods in Canada in 1964 were up 18 p.c. Gross national product reached \$47 billion during the year, the largest annual advance since 1956.*

ranged between \$1,100,000,000 and \$1,500,000,000 in each of the years from 1956 to 1960. The largest deficits occurred in the latter part of 1956 and the first half of 1957 and again in 1959. Both were periods of intense economic activity.

Over recent years the deficit has moderated; and at about \$550,000,000 in 1963 was less than one-half of the 1960 deficit. In accord with the changing strength of demand at home and abroad, variations in the current account deficit have reflected mainly changes in demands for goods. In each of the three years after 1960, there were export balances, with the merchandise surplus exceeding \$500,000,000 in 1963, due largely to extraordinary sales of wheat and flour on Russian account. Over the longer period, too, most of the current account deficit has originated from non-merchandise transactions. Since 1959 these have caused yearly deficits of more than \$1,000,000,000.

Many factors have contributed to the growth of this highly significant element in Canada's international transactions. Rising personal incomes in

Canada have opened widening opportunities for spending on non-resident services including travel. The influx of new Canadians has led to rising remittances by those having family connections outside Canada. Joint defence undertakings and contributions to developing areas have added to Canadian expenditure abroad, as have also transactions which spring from the spreading network of international investment.

The largest element in the deficit from non-merchandise transactions has been interest and dividend payments, reflecting part of the cost of financing the accumulated deficits of earlier years. With miscellaneous investment income, these transactions have, in recent years, resulted in net payments by Canada of well over \$500,000,000 annually. Some of the effects of the massive imports of non-resident capital have yet to be fully felt.

Large parts of the income accruing to non-residents have been retained for investment in Canada, while many of the new developments have not yet matured to the point where income remittances could be expected. Growing international financial relationships have also been reflected in increasing payments by branch and subsidiary companies for administrative and other services supplied from abroad. Net payments of this kind, including those between unaffiliated business organizations, have been rising and are now over \$200,000,000 annually.

While the financing of external deficits on current account has been accomplished for the most part with little or no visible difficulty, Canada's international financial position in recent years has experienced several short-lived but severe shocks. The crisis of confidence which developed in 1962 led to a loss of more than \$1,000,000,000 of Canada's official gold and exchange holdings in a space of less than eight months. With international assistance the Government undertook strong measures to restore balance in the international accounts, and official holdings were rapidly rebuilt. In 1963 tax measures proposed in the United States for balance of payments purposes again led to an extraordinarily sharp decline in the Canadian reserves. However, arrangements recognizing Canada's special position brought the heavy drain to an end.

### *A Decade of Increased Investment*

The substantial growth in the investment of foreign capital in Canada during the past decade has been the principal factor in increasing Canada's net international indebtedness from \$5,000,000,000 at the end of 1951 to about \$20,000,000,000 at the end of 1964, about \$1,000 for every man, woman and child in Canada.

Canada's gross external liabilities amount to well over \$30,000,000,000, of which about half represents direct foreign investment in Canadian enterprises controlled by non-residents. A substantial part of the remainder covers portfolio investment in Canadian corporations by non-residents.

At the same time Canada's gross external assets total well over \$10,000,000,000 of which more than \$4,000,000,000 is represented by government loans to overseas countries, subscriptions to international financial organizations and holdings of gold and foreign exchange.



*The pulsating tempo of Toronto, and the many ethnic groups living and working in the metropolitan area, attract more immigrants to this centre yearly than to any other community. Metropolitan Toronto's population in 1964 was almost two million.*

Dependence on external sources for some types of capital, together with the special advantages often associated with this capital, has led to a degree of foreign ownership and control of Canadian industry unique in economic history. Foreign investment accounts for 63 p.c. of the ownership of the Canadian petroleum and natural gas industry and represented control of 74 p.c. at the end of 1962.

The mining industry is 62 p.c. foreign-owned and 57 p.c. foreign-controlled. Manufacturing, other than petroleum refining, is 54 p.c. foreign-owned and 60 p.c. foreign-controlled. The degree of foreign ownership and control varies considerably in different branches of manufacturing. Other areas of Canadian wealth such as utilities, merchandising, housing and social capital are, of course, Canadian-owned and controlled to a much larger extent than are the petroleum, mining or manufacturing industries.

A substantial part of foreign capital in Canada has taken the form of equity investment and, as a result of the retention of earnings, foreign investments increase each year by some hundreds of millions of dollars more than the capital actually imported. Indeed, during the post-war years to the end of 1962 the earnings accruing to non-resident investors, but voluntarily retained in Canada to finance expansion, have amounted to about \$4,500,000,000. In addition, actual transfers of interest and dividends in the most recent years have exceeded \$800,000,000 annually. The significant part of the corporate profits which accrues to non-residents is a measure of the important place of foreign capital in the development of the Canadian economy.

## Department of Trade and Commerce

The primary function of the Department of Trade and Commerce is the promotion of Canada's export trade. The Department makes available to businessmen a wide variety of services to assist them in selling their products abroad. These services are provided by the Department's head office in Ottawa, six regional offices in Canada, and a corps of Trade Commissioners stationed around the world.

Canada's export trade reached a record \$8,300,000,000 in 1964, an increase of 19 p.c. over 1963. Income from non-resident travel also rose to record levels at \$661,000,000. With growing demands for its services, the Department increased its activities on all fronts.

The Department's 1964 trade fairs and trade missions programs were the most extensive yet undertaken. Fifteen Canadian trade missions were sent to countries around the world and 10 departmentally-sponsored foreign trade missions were brought to Canada. Canadian exhibits were erected at 46 trade fairs abroad.

The **Canadian Government Exhibition Commission** organizes, designs, produces and administers all Canadian exhibits at fairs and exhibitions abroad in which the Canadian Government participates. It also advises private exhibitors and their agents on the best means of displaying Canadian products at trade fairs abroad. It acts as agent for all Federal Government departments in the preparation of exhibits and displays for use in Canada, and is responsible for international fairs and exhibitions held in Canada that are financed and sponsored by the Federal Government.

The **Canadian Government Travel Bureau** is responsible for encouraging tourist travel to Canada, and co-ordinates tourist promotion outside Canada by the provinces, transportation companies, and national, regional and local tourist associations. It undertakes extensive tourist advertising campaigns abroad, provides tourist publicity material for foreign newspapers, magazines, radio and television outlets, and annually handles approximately 1,000,000 inquiries from potential visitors to Canada. It operates tourist offices in Boston, New York, Chicago, Minneapolis, Los Angeles and San Francisco in the U.S.A. Overseas offices are located in London, England, and Frankfurt, Germany.

The **Trade Commissioner Service** is the main overseas arm of the Department, and is responsible for promoting Canada's foreign trade interests abroad. In 1964, 158 Trade Commissioners, stationed at 66 offices in 47 foreign countries, served the Department and the Canadian business community in the principal commercial centres of the world. The Commissioners know the economic conditions in their territories, and provide information on potential markets for Canadian commodities and on foreign competition, import controls, tariff provisions, shipping facilities and labelling regulations. They assist in securing reliable agents for Canadian firms and provide a point of contact for visiting businessmen.

The **Trade Fairs and Missions Branch** develops and administers the Department's programs for the participation by Canadian firms in trade fairs abroad, the dispatch of Canadian trade missions abroad and bringing departmentally-sponsored foreign trade missions to Canada. It works in close

*Canada exports a wide variety of products—from helium to Christmas decorations.*



co-operation with industry, other government departments, and other trade promotion branches of the Department.

The **Trade Publicity Branch** stimulates interest abroad in Canadian products and Canadian interest in export markets through booklets and periodicals for distribution in Canada and abroad, and trade promotion literature for use by Trade Commissioners in the field, at trade fairs and in connection with Canadian trade missions. It is responsible for trade promotion publicity and advertising in all communications media, and for disseminating information about Canada's trade and the work of the Department.

The Department's **commodity branches**—the Agriculture and Fisheries, Industrial Materials, and Manufacturing Industries and Engineering branches—are principally concerned with finding Canadian sources of supply to meet overseas demands for goods and services. They maintain close liaison with industry to obtain the information on Canadian materials, products and services that forms the basis of the Department's trade promotion activities. The liaison also enables them to relay to industry commercial intelligence on export trade opportunities received from the trade promotion branches and other sources.

The **Trade Services Branch** administers controls established under the Export and Import Permits Act, and studies and reports upon all transportation matters affecting external trade. It also administers the Department's six regional offices across Canada.

The **Office of Trade Relations** is responsible for keeping under review Canada's trade relations with all countries, preparing material for trade and tariff negotiations, participating in various international conferences, interpreting foreign regulations affecting Canadian exports, and providing information on these matters to the business community.

The **Standards Branch** administers federal regulations pertaining to commercial weighing and measuring devices and the marking and labelling of certain products.

The **Economics Branch** analyses the general economic situation in Canada and conducts studies on market conditions.

The **Export Credits Insurance Corporation**, which reports to Parliament through the Minister of Trade and Commerce, provides facilities for Canadian exporters in two fields: export credits insurance and long-term export financing. Its insurance operations protect Canadian exporters against losses arising from causes beyond the control of either the buyer or exporter. Financing facilities are offered for capital goods exports, usually connected with major projects, that require credit terms extending beyond five years. The maximum aggregate insurance liability authorized is \$800,000,000. The total funds available for financing are \$400,000,000.



*Sorel, Quebec, at the confluence of the Richelieu and St. Lawrence Rivers, is an active seaport, and busy industrial centre. A smelter to handle titanium ores was established here in 1951.*

## Transportation

# Changing Patterns of Travel

Since World War II, a revolution has taken place in Canadian transportation. Passengers have been deserting trains and buses to travel short distances by car and long distances by air.

Between 1948 and 1963, the total number of inter-city passenger-miles increased 2.42 times. However, declines of 35 p.c. and 13 p.c. in inter-city passenger-miles were recorded by rail and bus transportation respectively, while travel by passenger car and aircraft increased 3 times and over 7 times respectively in the period 1949 to 1963. Inter-city travel by passenger car continues to be by far the most popular mode of travel, accounting for about 86 p.c. of all inter-city passenger miles in 1963.

The movement of freight has also changed its pattern. At the end of World War II, railways were handling nearly three quarters of the ton-miles of freight moved between cities; fifteen years later their share was barely one half. The proportion carried by water was roughly unchanged during this period, although the quantity in absolute terms has more than doubled. Freight moved by highway carriers, however, has increased five fold.

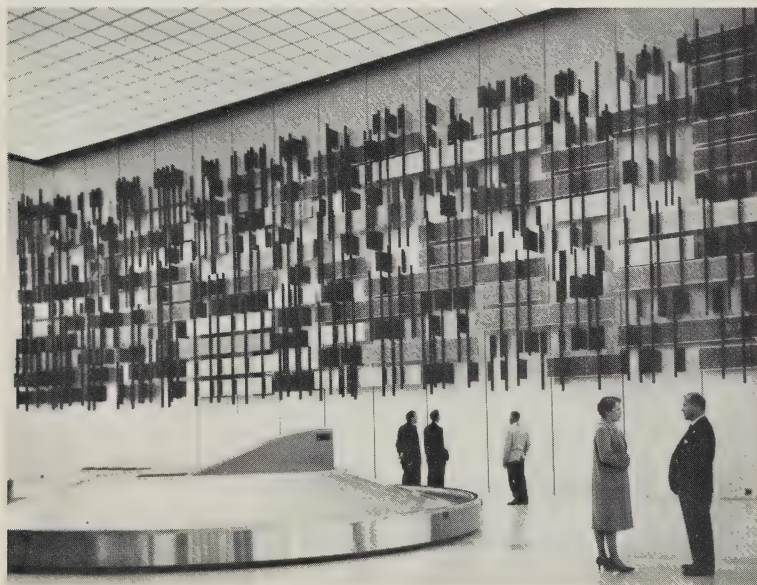
Oil pipelines, a new development in long-distance transportation since the end of World War II, carried almost 15 p.c. of the total inter-city ton-miles in 1963. Air cargo has shown a great increase, but still totals less than one tenth of one per cent of all inter-city ton-miles.

## *Technological Developments*

These changes in traffic patterns have been largely caused by the enormous technological development of the last two decades, especially in the air, road and pipeline transportation industries. Improved techniques are also evident in the older established transportation industries. The railways have switched from steam to diesel locomotives, built electronically-operated freight yards and introduced machine-processing of data for operational, analytical and accounting purposes. In addition, they have built new lines into the remote mining areas which have opened up since the War, abandoning many uneconomic lines and services, particularly passenger services, and expanding into the highway transport field to a significant degree.

The building of the St. Lawrence Seaway brought benefits to inland shipping by enabling all but the largest ocean freighters to sail some 2,200 miles from the sea up the St. Lawrence and through the Great Lakes to the Lakehead. The seven locks of the Seaway accommodate ships up to 730 feet in length.

Air services have increased and expanded and new jet and turbo-prop aircraft have been brought into service. Huge new airports and hangars have been built and competitive fares continue to attract passengers. In many northern areas of Canada the only means of transportation is by air; even those settlements that can be reached by ship in the summer depend on aircraft the rest of the year.



*A spectacular mural in the Winnipeg International Airport interests passengers awaiting the arrival of baggage on carousel conveyors.*

Truckers have been quick to exploit the benefits of improved highways and trucks; freight may now be picked up at a shipper's warehouse in one part of the country and delivered by the same truck to a consignee perhaps two or three thousand miles away. Such an occurrence was rare only ten years ago. Together with the increase in trucking as a means of long-distance transport, the size of trucking companies has also expanded to such an extent that some companies now operate as many as 1,000 vehicles. This increase in trucking service has been paralleled to a lesser extent by an increase in private trucking.

Passenger traffic on the highways is either by bus or by private car; the latter is by far the most commonly used medium. In fact, so ubiquitous has the family car become that every town and city is plagued with problems of traffic congestion, parking, accident hazards and the building of extensive thoroughways.

Pipelines for natural gas, petroleum and petroleum products are now a major element in Canada's vast transportation network. They run from the oil and gas fields of Western Canada as far east as Montreal, as far south as California.

## Shipping

All Canadian waterways, including canals, lakes and rivers, are open on equal terms to the shipping of all countries of the world, except for the coastal trade.

In May 1961, the Minister of Transport announced that the Great Lakes and the St. Lawrence River system would be excluded from some of the reciprocal provisions of the British Commonwealth Merchant Shipping Agreement, under which ships enjoy equal privileges with Canadian ships in the carriage of goods and passengers from one port in Canada to another port in Canada, in other words, the coastal trade. This means that the exclusive right to carry goods and passengers between Canadian ports in the Great Lakes and the St. Lawrence River system from Havre St. Pierre now belongs to Canadian-registered ships. In 1963 the coastal trade carried 46,119,756 tons of cargo, compared with 43,769,420 in 1962. Of this total, 41,275,894 tons, or 89.5 p.c., were carried in Canadian vessels; the remainder was carried almost entirely in vessels of British registry.

During 1963 a total of 136,401 vessels engaged in international or coast-wise shipping arrived at Canadian ports, compared with 142,594 vessels in 1962 and 147,171 in 1961. The total tonnage of all cargo loaded and unloaded at Canadian ports in international shipping amounted to 114,586,111 tons in 1963 compared with 102,155,098 tons in 1962. Of this tonnage, a total of 30,862,803 tons, or 26.9 p.c., was carried in vessels of Canadian registry.

The major commodities exported by ship in 1963 were iron ore (26,063,195 tons), wheat (12,308,281 tons), gypsum (4,581,484 tons), lumber and timber (3,664,132 tons), newsprint (2,929,590 tons), and pulpwood (2,070,751 tons). Import shipments of bituminous coal (13,359,432 tons), crude petroleum (7,778,537 tons), iron ore (6,508,742 tons), fuel oil (3,706,747 tons), and aluminum ore (2,013,968 tons), constituted 72.2 p.c. of the total unloaded.



*Air Canada (formerly Trans-Canada Air Lines) is in its 28th year of operation (1965). Many new terminals have been constructed recently and an electronic reservation system established.*

Canadian aids to navigation include adequate marking of dangerous areas by lighthouses and other marine signals, an efficient pilotage service, ice-forecasting and icebreaking services, and radio-signal and direction-finding stations. Comprehensive federal legislation and regulations ensure a high standard of safety for navigation in Canadian waters.

## Harbours

Canada's geographical situation, with coastlines on three oceans, and the magnificent 2,687-mile St. Lawrence Seaway penetrating deep into the continent, makes water transportation of great importance. No less than 21 ports handle more than 2,000,000 tons of freight every year, and the maintenance and operation of harbour facilities is essential to the smooth running of the economy.

### Foreign and Coastwise Trade through Ports Handling over 2,000,000 Tons in 1963

Port	Foreign		Coastwise		Total Freight Handled
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	
Montreal.....	4,865,808	6,695,660	4,181,062	4,983,202	20,725,732
Vancouver.....	8,850,039	1,176,381	4,059,755	3,766,006	17,852,181
Port Arthur-Fort William..	3,728,662	408,758	9,669,899	821,828	14,629,147
Sept. Iles.....	11,929,934	279,056	214,018	160,052	12,583,060
Hamilton.....	208,420	7,665,320	380,298	681,265	8,935,303
Halifax.....	2,410,746	3,446,179	1,784,725	546,841	8,188,491
Port Cartier.....	7,112,380	54,559	48,987	16,902	7,232,828
Baie Comeau.....	3,006,654	1,921,706	213,576	1,411,595	6,553,531
Toronto.....	364,012	3,793,231	299,685	1,709,738	6,166,666
Sault Ste. Marie.....	445,867	4,007,187	319,279	980,347	5,752,680
Quebec.....	1,350,742	1,157,565	175,558	3,036,246	5,720,111
Saint John.....	1,467,211	2,488,324	843,608	455,404	5,254,547
Trois-Rivières.....	1,715,769	1,156,451	21,648	1,375,482	4,269,350
New Westminster.....	1,127,545	102,992	1,273,509	1,376,383	3,880,429
Sarnia.....	145,954	912,444	2,031,445	355,205	3,445,048
Sydney.....	301,513	662,317	1,190,394	1,017,952	3,172,176
Port Colborne.....	1,104,306	347,375	444,152	956,632	2,852,465
Sorel.....	893,843	231,420	56,521	1,588,285	2,770,069
Port Alfred.....	401,241	1,851,802	14,841	388,635	2,656,519
Victoria.....	1,226,831	112,791	295,396	826,019	2,461,037
Hantsport.....	2,211,672	1	—	—	2,211,673

Eight harbours—at Halifax, Saint John, Chicoutimi, Quebec, Trois-Rivières, Montreal, Vancouver and Churchill—are administered by the National Harbours Board, a Crown corporation established in 1936. The Board provides and operates port facilities such as wharves and piers, transit sheds, grain elevators, cold storage warehouses, and terminal railways. Eleven other harbours are administered by commissions that include municipal as well as federal appointees and, in addition, there are about 300 public harbours, all of which are under the supervision of the Department of Transport. At most ports, there are additional dock and handling facilities owned by private companies such as railways, pulp and paper, oil, and sugar industries.

Certain of these ports, such as Sept Îles, Port Alfred and Hantsport, serve large industrial establishments rather than large aggregations of population; their cargoes are therefore limited mainly to the movement of such heavy bulk raw materials as iron ore at Sept Îles, bauxite at Port Alfred and gypsum at Hantsport.

## Canals

The major canals in Canada are those of the St. Lawrence-Great Lakes waterway with seven locks, providing navigation for vessels of 25-foot draught from Montreal to Lake Ontario; the Welland Ship Canal by-passing the Niagara River between Lake Ontario and Lake Erie with eight locks; and the Sault Ste. Marie Canal and lock between Lake Huron and Lake Superior. These 16 locks overcome a drop of 580 feet from the head of the lakes to Montreal.

The Seaway accommodates all but the largest ocean-going vessels and the upper St. Lawrence and Great Lakes are open to 80 p.c. of the world's salt-water fleet. During 1963 the volume of freight carried through the St. Lawrence section of the Seaway (Montreal to Lake Ontario) totalled 31,164,332 tons compared with 25,747,821 tons in 1962 and 13,499,698 tons in 1956, the peak year prior to the opening of the Seaway in 1959.

Subsidiary Canadian canals or branches include the St. Peter's Canal between Bras d'Or Lakes and the Atlantic Ocean in Nova Scotia; the St. Ours and Chambly Canals on the Richelieu River, Quebec; the Ste. Anne and Carillon Canals on the Ottawa River; the Rideau Canal between Ottawa and Kingston; and the Trent and Murray Canals between Lake Ontario and Georgian Bay in Ontario. The commercial value of these canals is not great but they are maintained to control water levels and permit the passage of small vessels and pleasure craft. The Canso Canal, completed in 1957, permits shipping to pass through the causeway connecting Cape Breton Island with the Nova Scotia mainland. During 1963, 74,585,427 tons of freight passed through all Canadian canals in 21,811 vessels.

## Railways

More than 80 p.c. of railway transportation in Canada is provided by two great transcontinental railway systems: the Canadian National Railway System, a government-owned body, and the Canadian Pacific Railway Company, a joint stock corporation. These two systems, though highly competi-

*Railways form one of the largest areas of capital investment in Canada. Computer-controlled freight handling and automated shunting, signalling and train despatching, have greatly improved facilities.*



tive, co-operate in many fields where duplication of service is not profitable. Both systems, in addition to their far reaching railway operations, conduct other transport activities: fleets of inland and coastal vessels, ocean-going steamships, nation-wide telegraph services providing communications between all principal points of Canada with connections to all parts of the world, high-way transport services, year-round and resort hotels, and extensive passenger and freight air services over domestic and international routes.

Railway operating revenues of the two lines in Canada, excluding high-way transport, telecommunications and other ancillary operations, totalled \$1,064,388,184 in 1963, up 4.0 p.c. from the previous year. During the same period, railway expenses rose 2.7 p.c. to \$1,023,181,302 and net earnings before fixed charges amounted to \$41,206,882.

Revenue freight traffic in terms of tonnage and distance aggregated 65,864,000,000 ton-miles in 1963, up approximately 7,443,000,000 from the earlier year. The average length of haul was greater at 486.3 miles, while the average revenue per ton-mile fell off to 1.42 cents from 1.52.

The number of passengers carried by the two major railways rose 8.0 p.c. to 19,499,271. Seventy per cent of this increase was attributable to the growth of commuter travel. Passenger-miles increased 3.1 p.c. to 1,955,000,000, while the average journey declined to 100 miles. The average revenue earned per passenger-mile dropped to 2.9 cents.

Throughout 1963 the two transcontinental railways made further improvements in service to customers and continued increases in operating efficiency. Such specialized equipment as tri-level automobile cars were introduced to railway shippers; new branch lines were being constructed to serve mineral developments in various parts of Canada; and further advances were made toward integrating the handling of merchandise shipments by the various transportation facilities operated by the two systems.

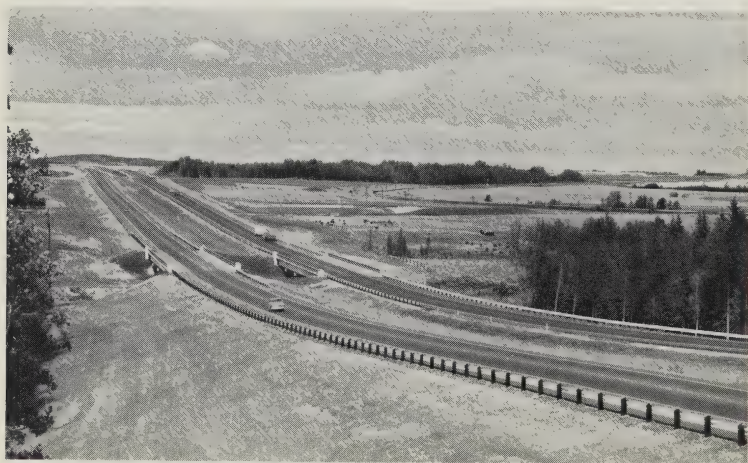
Construction of Canada's first pioneer railway to be built into the Northwest Territories by Canadian National for the Federal Government, began in 1961 and was completed in 1964. The 430-mile railway from Peace River, Alberta, to Pine Point on the south shore of Great Slave Lake will provide easy access to the rich lumber, oil and mineral reserves of the north.

Intensifying their campaign to stimulate passenger travel, the railways in 1963 broadened their incentive fare rates. In addition to time-payment services, family rates and all-inclusive package plans, an experimental plan was introduced whereby prices are related to high and low traffic patterns and to distance. A ticket-by-mail plan enables customers to order tickets by telephone and receive them by mail. Some plans include the transportation of the family car over long distances.

## Road Transport

Because of its large land area and the unusual distribution of its relatively small population, no other country is more dependent on its transportation facilities than Canada. At one time rail and water were the primary modes of transportation. However, economic, technological and demographic changes over the past fifty years have increased the importance of road transportation to such an extent that Canada can rightly be considered a nation on wheels.

In 1963, there were 6,074,655 motor vehicles registered in the country; of these, 79 p.c. were passenger automobiles; 18 p.c. were trucks and road tractors; 1 p.c. were buses of all types and 2 p.c. were other vehicles such as motorcycles and farm tractors, licensed in accordance with the varying provincial regulations. On a total Canadian registration basis, there was one motor vehicle for every 3.1 persons, compared with the United States ratio of one motor vehicle for every 2.3 persons.



*Alberta has paved all but a few hundred miles of its more than 4,000 miles of main highways. Divided roads link communities in heavily-travelled areas.*



*To speed transportation in Montreal, the largest metropolitan centre in Canada, (with a population of 2,260,000 in 1964), a subway system is under construction.*

In Canada, the passenger automobile continues to provide the bulk of passenger transportation by road, with inter-city and urban transit systems playing less significant parts. In 1963, the average passenger automobile consumed approximately 620 gallons of motive fuel and was driven 8,500 miles. According to the most recent survey, the average Canadian household owns 1.1 automobiles, and 9.1 p.c. of its expenditures are made for this type of transportation, compared to 2.1 p.c. expended by the average household on all other modes of transportation. In terms of inter-city passenger miles, passenger automobiles accounted for 86 p.c. of the total in 1963.

Buses operating primarily on inter-city and rural routes carried over 48,600,000 passengers, earned over \$48,638,000 and travelled more than 93,400,000 miles. The average fare per passenger on these services was 99 cents. Bus travel accounted for a slightly larger number of miles than rail transportation. In 1963, 5.3 p.c. of the inter-city passenger miles covered by all modes were by inter-city bus, while rail accounted for only 3.7 p.c.

Canada, with 70 p.c. of its population concentrated in urban areas, relies heavily on urban transit systems to provide local transportation services. Of the total of 988,147,638 passengers carried for a gross operating revenue of \$142,451,128, municipally owned systems serving the larger population centres carried 868,822,950 passengers and earned \$125,853,336, while privately owned systems in smaller centres carried 119,324,688 passengers and had operating revenues of \$16,597,792. The average fare of the municipally owned systems—14.5 cents in 1963—was 4.3 p.c. higher than the 13.9 cent average fare charged by the privately owned systems.

The increasing ownership of private automobiles and the growth in the size of the urban and suburban areas have created serious problems for urban transit systems. In an effort to provide expanded and more flexible services at minimum cost, transit systems have been progressively abandoning the use of streetcars and trolley buses; only Toronto still uses streetcars, although some other systems still use trolley buses to a limited degree.

The trucking industry is one of the more important providers of freight transportation, especially of packaged goods over the shorter distances. In 1961, there were 975,000 trucks and road tractors operating on Canada's roads and streets. The average vehicle travelled an estimated 7,100 miles and carried an average of 5.3 tons for an estimated ton-mile figure of 18,900 per vehicle. Although for-hire trucks accounted for only 6.2 p.c. of the total number of trucks in service, they were by far the most important class in providing transportation services. This type of vehicle travelled an average of 24,900 miles and carried 11.0 tons of freight for an average of 198,900 ton-miles. Revenue earned averaged \$12,500 per truck or 6.3 cents per ton-mile.

Although the construction and maintenance of the country's roads and streets are primarily the responsibility of the provincial and municipal governments concerned, the Federal Government provides financial assistance to both in an effort to ensure the development of the integrated system of highways and streets required by today's large volume of vehicular traffic. Total expenditures by all levels of government on highways and urban streets came to \$1,031,500,000 in 1962, or \$56 per capita.

As a result of this mutual effort, Canada had 478,362 miles of roads and streets by the end of 1962, of which 69 p.c. were surfaced. Although a 2.4 p.c. increase between years may not appear significant, it should be noted that most of the mileage constructed in recent years is more durable and is designed to handle a greater volume of traffic than earlier construction. On average in 1962, there were 12.1 motor vehicles for every mile of road and street in Canada, and 17.5 motor vehicles per mile of surfaced road and street.

To meet the problem of increasing traffic congestion, many urban areas in Canada have embarked upon the construction of limited-access throughways designed to speed in and outbound traffic flows between suburban and central districts, during peak traffic periods, and to permit through-traffic to by-pass the congested central areas where traffic densities are already too high. The Metropolitan Boulevard in Montreal, the Ottawa Queensway, the Route 401 by-pass and the Gardiner Expressway in Toronto and the Deas Island Road and Tunnel in Vancouver are examples of this type of development.

In a further effort to ease downtown traffic congestion, Toronto and Montreal are installing subway systems. Toronto, with one North-South line and its two-mile University Avenue extension already in operation, is at work constructing a 10-mile East-West line to be completed by 1969. Montreal is now engaged in constructing its first subway line. No other Canadian cities are yet actively engaged in developing such systems.

## Civil Aviation

Vast distances, rugged terrain and extreme variations in weather have



*A tunnel leads to the circular aeroquay at Toronto's new international airport. A seven-storey parking garage accommodates 2,400 cars.*

contributed to the growth and development of civil aviation in Canada. The smooth operation of aircraft, airports, traffic controls, communication, navigational facilities and meteorological services is the result of many years of planning, training and research.

Competition and rapid technical developments have greatly increased the speed and efficiency and have reduced the costs of air transportation in Canada. The economic use of larger and faster aircraft is made possible by the great distances to be covered, and jet services are now common on all the major routes. The elapsed flight time between Victoria, B.C. and St. John's, Newfoundland is now approximately eight and one half hours. Travel time between Montreal and Vancouver has been reduced to six hours. Automated methods of baggage handling are reducing the problems of post-flight delays, and efforts are being made to devise ways of shortening the travel time between airports and the central areas of the cities they serve.

A number of American and other foreign carriers operate regular commercial air services between Canada and United States or overseas countries. In 1963 these carriers transported into and out of Canada 850,954 revenue passengers and 12,421 tons of goods. (Passengers and goods carried in transit through Canada are excluded from these figures.)

In addition to regular scheduled services, a number of small airlines operate non-scheduled services, many of them to parts of Canada that are inaccessible by other means of transportation. They also supply such other services as recreational flying, aerial photography and surveying, aerial pest control and aerial advertising. Some western farmers ride the range by aircraft to spread fertilizer and insecticides.

On December 31, 1963, there were 23,410 airmen licensed in Canada, including pilots, air navigators, air traffic controllers, flight engineers and aircraft maintenance engineers. Courses in pilot training, air traffic control,

meteorology, radio operation and inspection, and ice observation are arranged by the Department of Transport.

The number of aircraft registered in Canada on December 31, 1963, was 6,501. Included were 4,306 private, 2,004 commercial and 191 government-owned aircraft.

Canadian air carriers transported 5,427,344 passengers during 1963, 3.0 p.c. more than in 1962. The number of passengers transported by Canadian carriers has nearly doubled in the period 1955 to 1963 inclusive. Passenger-miles on regularly scheduled flights nearly tripled during the same period.

Revenue goods carried during 1963 amounted to 125,529 tons, an increase of 6.2 p.c. over cargo in 1962. Cargo ton-miles have more than doubled and mail ton-miles have increased by approximately 50 p.c.

The number of airport licences in force as of December 31, 1963, amounted to 662. Of this number, 302 were land and 360 seaplane bases. Airport revenues in 1962 totalled \$15,518,801, compared with \$14,677,864 in 1961.

Assets of Canadian air carriers have increased at a remarkably fast rate in the last ten years. At the close of 1963, total assets, valued at \$363,731,385, were nearly six times greater than in 1951 (\$62,702,059). The acquisition of larger and more modern aircraft was the chief reason for this sharp increase in assets. In 1963, flight equipment valued at \$190,472,872 accounted for 52.4 p.c. of the total assets of Canadian carriers. However, the development of a more modern and more productive aircraft fleet is reflected in the rising costs associated with acquisition and ownership which, in turn, affects the overall financial picture.

### Operations of Canadian Air Carriers, All Services, 1962 and 1963

Item	Scheduled Carriers	Non-scheduled Carriers	Total 1963	Total 1962
	\$	\$	\$	\$
Operating revenues:				
Unit toll transportation:				
Passengers.....	222,759,067	2,919,670	225,678,737	211,140,012
Express.....	4,246,327	136,897	4,383,224	4,348,518
Freight.....	13,417,520	995,987	14,413,507	12,368,042
Excess baggage.....	1,518,551	60,553	1,579,104	1,525,865
Mail.....	15,254,049	558,249	15,812,298	14,414,876
Total unit toll transportation.	257,195,514	4,671,356	261,866,870	243,797,313
Bulk transportation (charter and contract).....	15,954,697	21,035,945	36,990,642	27,993,791
Specialty and non-flying services	3,617,835	6,360,566	9,978,401	12,827,217
Total operating revenues....	276,768,046	32,067,867	308,835,913	284,618,321
Operating expenses—total.....	263,882,573	30,259,597	294,142,170	277,333,944
Operating income (loss).....	12,885,473	1,808,270	14,693,743	7,284,377
Net income after taxes.....	46,155	1,343,905	1,390,060	Dr. 4,597,327
Revenue passengers carried.....	No. 4,906,134	No. 521,210	No. 5,427,344	No. 5,298,799
Revenue goods carried:	lbs.	lbs.	lbs.	lbs.
Cargo (freight and express)....	114,155,075	93,957,688	208,112,763	196,776,738
Excess baggage.....	890,869	161,868	1,052,737	1,370,510
Mail.....	40,440,427	1,452,500	41,892,927	38,430,775
Totals.....	155,486,371	95,572,056	251,058,427	236,578,023

## Oil and Gas Pipelines

Oil and gas pipelines are a major element in Canada's vast transportation network. Since 1950, when pipelines were a negligible factor in inter-city freight traffic, growth has been so rapid that oil and gas pipelines now account for about one fifth of ton-mile freight traffic.

Until 1950 Canada's large potential reserves of oil and gas were landlocked in the centre of a vast continent. The nation was dependent upon imports of coal and oil for the populous areas of the west coast and the lower Great Lakes-St. Lawrence River System. Since then two of the world's longest oil and gas pipelines, nearly 2,000 miles in length, have been built to link the western Canadian oil fields of Alberta and Saskatchewan to major cities as far east as Montreal. In addition, three major pipelines, several hundred miles in length, cross the Rocky Mountains and supply the lower mainland of British Columbia and the Pacific northwestern United States.

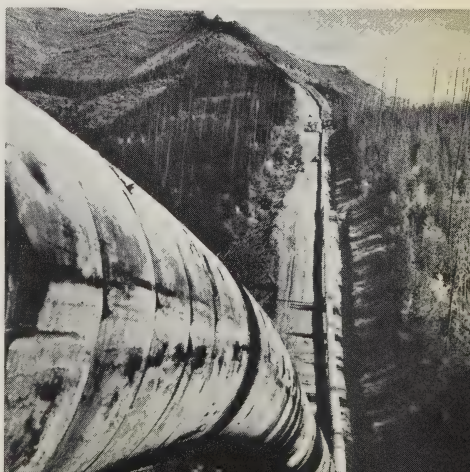
In 1961 a new 1,100-mile pipeline was completed from Alberta to California, of which 400 miles are in Alberta and British Columbia. The year 1962 saw the addition of 483 miles of intra-provincial pipelines built to facilitate gathering of crude oil within the provinces of Alberta, British Columbia and Saskatchewan.

The oil pipeline transport industry moves almost 700,000 barrels per day of crude oil from the oil fields of Alberta, British Columbia, Saskatchewan and Manitoba to the major refineries located across Canada from Vancouver to Toronto. It operates 10,037 miles of pipeline and ancillary facilities costing over \$550,000,000. In 1962 the industry carried 388,000,000 barrels for an average of 1,060,000 barrels per day.

Trunk pipelines increased their traffic by 13.0 p.c. to 166,000,000,000 barrel-miles or 24,300,000,000 ton-miles over 1961. The average length of haul increased to 438.6 miles per barrel, compared with 426.8 in 1961, while the average cost of transport was 0.39 cents per ton-mile. The rated capacity is estimated to be approximately 150,000 barrels per day per trunk line system mile.

The gas pipeline transport industry encompasses those pipelines which are engaged in the transportation of gas from gas fields or processing plants to local distribution systems. This industry has over \$850,000,000 invested in

*The Alberta-California pipeline winds over a 7,000-foot-high ridge. Canadian crude oil output has now grown to approximately 800,000 barrels per day. In 1964 the United States purchased some 404 billion cubic feet of Canadian gas.*



pipeline property and equipment and about 5,600 miles of pipeline. In 1962 the industry increased its business 45 p.c., carrying more than 550,000,000 cubic feet an average of 888 miles at a cost of 0.868 cents per ton-mile. This average distance of 888 miles for gas movements illustrates the tremendous distances involved in this industry. The average throughput per system mile in 1961 was 200,000 Mcf. per day and was in the order of 250,000 Mcf. per day in 1962.

Gas distribution utilities form an integral part of a vast pipeline system, bringing gas from the producing fields into the homes, shops and factories consuming this energy.

The gas distribution industry for the most part receives gas from the gas pipeline transport industry (some gas is received directly from the fields and processing plants) and delivers it through distribution networks to over 1,300,000 ultimate customers in almost all of Canada's major cities west of Montreal.

In 1962 this industry delivered about 410,000,000,000 cubic feet, an increase of 11 p.c. from the previous year. The residential sales account for about 33 p.c. of the market, industrial 52 p.c. and commercial 15 p.c. Alberta is the largest consuming province, taking 38 p.c. of the national market, followed by Ontario which consumes 34 p.c. This industry operates about 29,000 miles of pipeline, of which 11,000 miles are distribution mains smaller than 3" in diameter.

### Oil Pipeline Transport, 1959-62

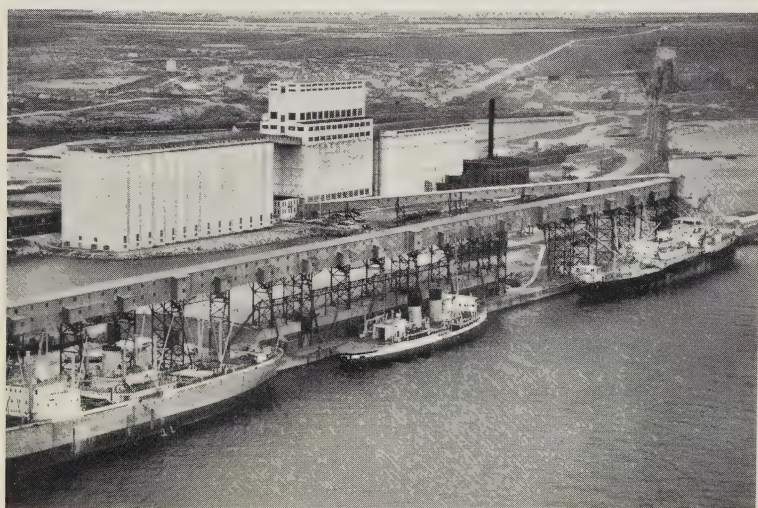
Item		1959	1960	1961	1962
Total net receipts:					
All commodities.....	bbls.	310,780,422	315,471,479	352,493,854	387,459,595
Crude oil (domestic)....	"	177,829,488	185,062,776	221,622,809	254,874,604
Total net deliveries:					
All commodities.....	"	307,348,736	312,777,909	350,891,871	385,294,367
Total operating revenues..	\$	87,063,987	94,209,335	106,728,135	122,747,571
Total operating expenses..	\$	21,830,343	22,926,604	24,554,444	28,056,494
Net income (after income tax).....	\$	20,985,946	23,502,277	30,715,081	36,426,607
Property account.....	\$	468,676,666	485,525,285	535,626,151	557,709,996
Long-term debt.....	\$	305,238,208	298,910,522	322,671,204	306,029,767
Pipeline mileage:					
Gathering.....	miles	2,382	2,775	3,164	3,494
Trunk.....	"	5,426	5,661	6,390	6,543
Barrel miles.....	'000	114,265,808	119,109,247	147,032,151	166,208,113



*A covered bridge over a ravine is designed to muffle the noise of trains on Toronto's subway system. Complete cost of the subway will exceed \$280 million.*

## Gas Utilities (Transport and Distribution Systems)

		1959	1960	1961	1962
Natural Gas Systems					
Total net receipts.....	Mcf.	375,817,275	455,818,504	566,267,871	786,755,343
Sales:					
Residential.....	"	96,073,524	108,275,167	119,667,024	134,919,118
Industrial.....	"	139,799,162	162,423,604	194,802,740	213,467,798
Commercial.....	"	42,241,167	49,881,756	56,269,778	63,674,593
Total operating revenues.....	\$	249,589,116	241,917,935	309,843,049	371,883,004
Total operating expenses.....	\$	164,992,275	137,683,457	181,079,173	209,088,907
Net income (after income tax).....	\$	7,384,727	20,152,586	38,797,713	53,431,897
Property account.....	\$	1,396,759,909	1,535,828,269	1,706,865,431	1,813,762,187
Long-term debt.....	\$	1,014,011,883	1,064,403,786	1,185,766,596	1,233,611,671
Pipeline mileage.....	miles	30,528	32,815	35,225	37,352
Manufactured and Liquefied Petroleum Gases Systems					
Sales:					
Residential.....	Mcf.	912,532	877,670	2,829,098	2,531,667
Industrial.....	"	161,359	945,240		
Commercial.....	"	417,108	375,662		
Total operating revenues.....	\$	1,941,865	2,127,723	2,398,082	2,686,970
Total operating expenses.....	\$	1,952,869	2,076,884	2,122,772	2,533,689
Net income (after income tax).....	\$	363,418	(305,255)	(260,648)	(198,254)
Property account.....	\$	10,086,346	10,301,373	10,877,456	11,732,834
Long-term debt.....	\$	n.a.	6,452,381	7,939,908	8,769,430
Pipeline mileage.....	miles	461	462	466	480



Forty foreign ships loaded 21.5 million bushels of Saskatchewan wheat at Churchill during the 1964 season. Inbound ships also bring varied cargoes for Western Canada.



*CP-CN telecommunications microwave network, extending from Montreal to Vancouver, and linking up with facilities in Canada and the Commonwealth communication's system, was officially opened in May, 1964. Shown in the front row are: (l. to r.) Hon. Paul Martin; Rt. Hon. L. B. Pearson, Douglas F. Bowie (Pres. and Gen. Mgr. of COTC), Hon. George McIlraith. In the back row, His Excellency Stanhope Reid, New Zealand High Commissioner to Canada, H. E. Sir Henry Lintott, British High Commissioner to Canada, H.E. D.O. Hay, Australian High Commissioner to Canada.*

## Communications

# Many Services Link the Nation

Canada is a challenge to communications from the standpoint of population, topography and climate. Telephone calls and television programs travel the entire width of the nation via microwave radio relay at the speed of light—186,000 miles per second—and services are being extended to remote northern territories. Complex installations providing communications for national defence span the country.

## Telephones

Many telephone systems provide service across the nation. They number more than 2,500 and range in size from large shareholder-owned companies to small co-operative systems in rural districts. The privately-owned Bell Telephone Company of Canada operates throughout the greater part of Ontario and Quebec as well as in parts of Labrador and the Northwest Ter-

ritories. It serves 61 p.c. of telephones in the country. The British Columbia Telephone Company, also shareholder-owned, serves 9 p.c. of the total. Four private companies cover the Atlantic Provinces and three provincially-owned systems serve the Prairie Provinces.

Canada's eight largest systems are associated in the Trans-Canada Telephone System, which co-ordinates long distance communication services on a nation-wide basis. In addition, Canadian National Telecommunications has telephone exchanges in the Yukon, the Northwest Territories, northern British Columbia and has provided more than 11,000 telephone sets in Newfoundland.

Canadian use of telephone service runs at a high level. Between 1952 and 1963, the number of telephones increased from 3,352,000 to 6,657,000—an average of one for 2.9 persons. Canadians lead the rest of the world in the number of telephone conversations per capita. Latest figures show the estimated number of calls per annum on all systems to be 11,299,830,000, representing an average of 1,697 calls per telephone and 592 per person. Long distance calls account for 2.3 p.c. of the total, most of them to points in Canada or between Canada and the United States.

About 93 p.c. of all telephones in Canada are now dial operated. In addition to dialing their local calls, many customers can also dial long distance calls. Plans call for the eventual extension of this service to overseas telephone traffic. This will be facilitated by the progressive introduction of All Number Calling throughout Canada and the United States. Under this system, all telephone numbers will consist of seven numerals. The new numbers will provide the additional exchange prefixes needed for expanding service and future growth, and will be compatible with the numbering systems in virtually all overseas countries. Numerous flexible services are provided for business and industry.

### *CN-CP Telecommunications*

Canada's two major telecommunication companies, Canadian National and Canadian Pacific, reach into the lives of every citizen with a diversity of services ranging from messenger-delivered telegrams to computer-oriented communications systems for corporations, government departments, transportation systems and the military. CN-CP link Canadians to each other and to the world.

Backbone of CN-CP telecommunications operation is their Trans-continental Microwave Service which stretches from St. John's, Newfoundland

*The new headquarters in  
Winnipeg of the Manitoba  
Telephone System.*





*This microwave antenna near Jasper, Alberta, is 9,000 feet above sea level—the highest site of the CN-CP telecommunications Montreal-Vancouver microwave network.*

to Vancouver. The Montreal-Vancouver section of this network was completed in early 1964. This network is the North American land link for the Commonwealth telecommunications system binding Great Britain, Canada, New Zealand and Australia. It is equipped to handle the diverse communications services of Canadian National and Canadian Pacific from simple point to point teletype circuits to television broadcasts.

The evolution of telecommunications indicates that machine-to-machine communications will, in a few years, surpass man-to-man exchanges in volume of information. CN-CP are in step with this trend and already have services operating along these lines. A computer-operated dial quotation service for the Toronto Stock Exchange, for example, gives TSE-approved subscribers throughout North America up-to-the-minute statistical information at the twist of a dial.

In late 1965 CN-CP will introduce an automatic circuit switching system of advanced design which will meet a wide variety of the needs of business and government. Known as broadband switching, it is an all-in-one package that will enable subscribers to exchange intelligence from high-speed teleprinters, business machines, facsimile machines and computers. Since it is an "alternate record/voice" service, broadband switching may be used between subscribers for telephone conversations as well.

By fast pushbutton selection, subscribers will be able to call up a channel in one of several bandwidths up to 48 kilocycles to the remote destination. This choice will depend on the type of equipment to be used in a given trans-

mission. The equipment used by the subscriber may be of the type which transmits analog signals such as the human voice and facsimile machines produce. Alternatively, it may be of the type which transmits digital signals such as are produced by teleprinters and most business machines.

To send a copy of a drawing, or to transmit highspeed data will be a matter of selecting the appropriate location and bandwidth, informing the recipient of what is coming, and transmitting. A voice/data subset, about the size of a small dictation unit, will be provided to each subscriber to serve as his own push-button control centre for data transmission.

An ever-increasing volume of business messages is being moved on CN-CP private teletype networks and by Telex. There are more than 8,000 subscribers on the Telex network, using dial-and-type-service on a toll basis. Telex reaches far beyond the Canadian borders to 170,000 subscribers throughout the world. An interesting development has been the wide use of this service by police agencies in many parts of Canada.

Among recent CN-CP developments has been the Tel-a-Dex family of equipment designed to ensure efficient flexible inter-working of business machines and telecommunication facilities. These units include punched card to punched tape translators, code translators for business machine tapes using codes other than the common teleprinter code, and error detection sets which warn of any faults in transmission by comparison of check characters at the transmitting and receiving ends of a circuit.

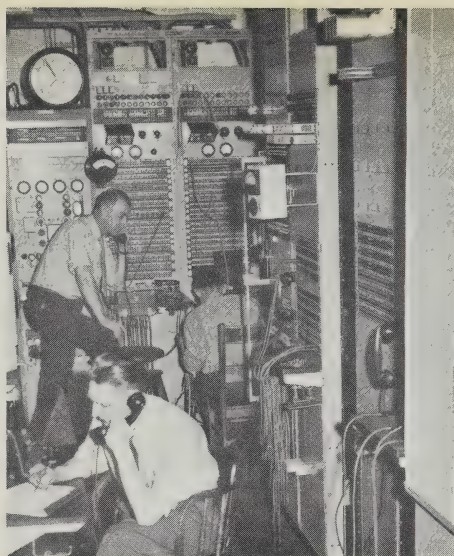
"Auto-Call", another comparatively new service, is a CN-CP innovation that allows automatic policing of traffic on a party-line system. By means of coded messages it will turn the various teleprinters on the line on or off, and give every unit appropriate opportunity to transmit or receive.

One of the most important contributions made by CN-CP Telecommunications is in the field of transportation. CN-CP provides more than 50,000 miles of teletype and 14,000 miles of facsimile circuits to bring fast and accurate weather information to aviation centres. Modern automatic teletype message switching centres at Vancouver, Montreal, Toronto, Winnipeg, Edmonton and Goose Bay are giving international airports a jet-age communications service which eliminates delays which were unimportant when the service was based on prop-driven aircraft.

As well as the airways, CN-CP are involved in communications for Canada's railways with their 40,000 miles of track. Originally children of the parent railways, CNT and CPT have grown into corporate giants in their own right and with their own identities.

CN-CP Telecommunications contribute an essential part of the NORAD defence system by providing some of the circuits and equipment to link the network together. By telephone, teletype and radio, over landline, microwave and "scatter" systems, information flows constantly from detection sites to control centre. Within seconds, interceptor pilots and missile crews can be alerted.

On its own, CNT is very active in the field of public telephone service in various Newfoundland communities, in the Northwest Territories and in the Canadian northwest. In all, there are almost 17,000 subscribers to the CNT telephone system. Of the more than 100 Newfoundland communities



*Toronto is the national communications centre for CN-CP telecommunications. Miles of in-plant circuitry monitor the performances of coast-to-coast networks.*

and settlements served by CNT, the largest exchange is at Gander with 1,600 subscribers. The CNT exchange at Whitehorse, Y.T., currently furnishes service to almost 2,000 telephone subscribers. The most northerly CNT telephone exchange providing both local and long distance service is well north of the Arctic circle at Cambridge Bay in the Northwest Territories.

CNT microwave has brought a new era to Canada's northland. Three major radio relay systems now exist across the Territories. Largest of these is the Canada-Alaska system built by CNT at a cost of \$25,000,000. This network reaches from Grande Prairie, Alberta, through British Columbia to Mount Dave on the Yukon-Alaska border and was completed by CNT in 1961. In conjunction with CNT landline facilities, microwave has brought modern telecommunication services to such centres as Whitehorse, Dawson City, Yellowknife, Hay River and Fort Providence.

At CNT System Headquarters, Toronto, a "Data-Central" point has been established which has far-reaching potential. Basically, it is a computer-operated switching system which is capable of doing almost any kind of data-processing job. At first, it was designed to switch message traffic for Air Canada. By 1966 approximately 25,000 messages daily will be switched to and from 50 circuits serving about 135 pieces of equipment at 58 Air Canada stations in this country and the U.S.A.

### *Canadian Overseas Telecommunications*

The Canadian Overseas Telecommunication Corporation, a Crown agency, is responsible for most overseas communications. Working in conjunction with other international telephone agencies, COTC maintains channels of communication to a number of European countries by way of undersea cable and shortwave radio.

While the Commercial Cable Company no longer operates submarine cables landed in Canada, it handles cable business through facilities leased from the Canadian Overseas Telecommunication Corporation. Western Union Telegraph Company divested itself of its ocean-cable system in 1963. The cable system has been operated since October 1963 by Western Union International Inc.

With the demand for overseas communications services—telephone, data and television—continuing to grow at a rapid pace, communications satellites like Telstar I, launched in July 1962, and Telstar II, launched in May 1963, are expected to play an increasing role in carrying this world-wide traffic. The Canadian Overseas Telecommunication Corporation is responsible for Canadian participation in any satellite program designed to provide overseas communication from Canada, and is currently participating in engineering and other studies to secure a proper place for Canada in the development and use of satellites for communications purposes.

The world's first transatlantic telephone cable, completed in 1956, is shared by the COTC with British and United States telephone systems. It was supplemented in 1961 by a Canadian-British cable, the initial step in a long-term plan to bring about a world-wide Commonwealth cable system. In 1963 at the Canadian Overseas Telecommunication Corporation inauguration, telephone messages were sent from Great Britain to Australia via Canada.

What is the future for communications? Canada's needs are well assured for years to come by the two large microwave systems. It is a matter of time before messages and TV programs are flashed from continent to continent in less than a second. The first relay station has already linked Europe to North America.

Still in the laboratory stage is the laser system—the theory of using a beam of concentrated light as a communication medium. The message-carrying potential of light is tremendous. The beam does not dissipate energy by fanning out like radar beams and radio waves.

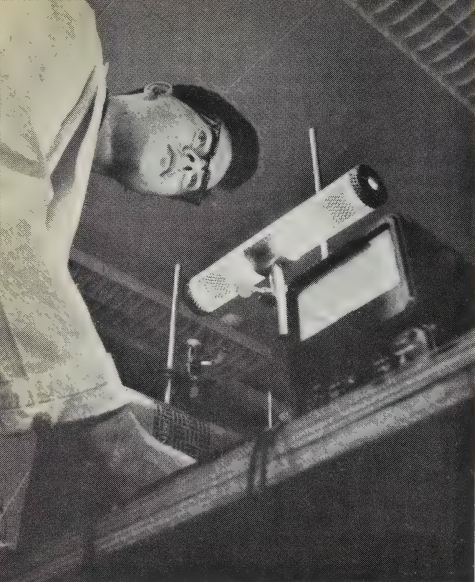
## The Press

Every weekday in Canada, 116 daily newspapers are published with more than 4,213,000 copies. The majority appear in the afternoon, 100 in English, 11 in French, and five in other languages.

The trend in daily newspaper publication is toward chain ownership. There are three large newspaper chains, one of which owns 24 papers. Editorial policy is, however, developed at the local level. Most newspapers have no competition in their own areas; only 17 cities have more than one daily paper.

*Movement of all "piggy-back" equipment across the CNR system is recorded and controlled from Montreal headquarters.*





*In the National Research Council a technician conducts a laser beam experiment.*

In addition to the dailies, there are 926 weekly papers, of which 671 are published in English, 184 in French and 71 in other languages.

Revenue from daily newspapers reached \$412,000,000 in 1962, of which \$312,000,000 was realized from advertising. Printed and bound books were produced to the value of \$47,000,000 although only about half was classed as reading matter. The remainder were catalogues and other advertising material. Recorded imports of books and other printed matter greatly exceeded exports, the former amounting to \$119,320,000 in 1963 and the latter \$7,500,000. Newspapers consumed \$67,600,000 worth of newsprint in 1962; publishing and printing industries, \$24,300,000 worth of book paper. In 1962 the entire industry employed 37,498 persons whose earnings amounted to \$180,654,000.

## **The Post Office**

Every year the average Canadian entrusts some 225 pieces of mail to Canada's 11,260 post offices for delivery. These may be dropped through letter slots at one of 3,230,280 addresses visited by letter carriers, or inserted in mail boxes on one of 5,580 rural routes. They may travel by highway, railway, air or water. The volume of mail transmitted by air increases each year; more than 12,000,000 ton-miles were flown in 1964.

The services provided by the Post Office Department are not confined to the delivery of mail. It provides many associated services, including the sale of unemployment insurance stamps, collection of government annuities' payments, distribution of many government forms, such as income tax and civil service employment application forms, issues money orders and has, since 1868, operated the Post Office Savings Bank.

During the year ended March 31, 1964, money orders valued at \$927,750,738 were issued and Post Office revenue for the same period reached \$235,865,053. The number of transactions, and the regular staff numbering 42,000, have made it necessary for the Department to turn more and more to the assistance offered by computers for accounting and salary operations.

In that period, 77 new buildings were completed, and 156 contracts were awarded for construction to begin after April 1964.



*Scarborough, a suburban township in metropolitan Toronto, is an important industrial centre. Its long row of modern plants is known as "The Golden Mile".*

### Finance and Capital Investment

## Many Changes Seen in Revenue and Expenditure Patterns

The Canadian dollar is a decimal currency with 100 cents to the dollar. Currency in the form of bills is issued by the Bank of Canada and the coinage, silver coins in denominations of one dollar, 50 cents, 25 cents, and ten cents, nickel five-cent coins and bronze one-cent coins, is issued by the Royal Canadian Mint. At the end of 1963 Bank of Canada notes totalling \$2,305,000,000 and coin totalling \$226,500,000 were in circulation.

In international transactions the Canadian dollar is freely convertible into the currencies of other countries. Since May 1962, the value of the Canadian dollar has been maintained within a range of one per cent on either side of the fixed par value of U.S. \$0.925, of the weight and fineness in effect in 1944. The value of the Canadian dollar relative to the currencies of a number of other countries is illustrated in the following table.

## Foreign Exchange Rates as of January 4, 1965

Country	Unit	Can. Dollar Equivalent	Units per Can. Dollar
Australia.....	Pound	2.398	.4170
Belgium & Luxembourg.....	Franc	.0216	46.23
Britain.....	Pound	2.997	.3336
France.....	New Franc	.2191	4.564
Germany.....	Deutsche Mark	.2700	3.704
Hong Kong.....	Dollar	.1873	5.339
India.....	Rupee	.2248	4.448
Italy.....	Lira	.0017	581.7
Japan.....	Yen	.0030	335.2
Malaysia.....	Straits Dollar	.3508	2.851
Mexico.....	Peso	.0859	11.64
Netherlands.....	Guilder	.2988	3.347
New Zealand.....	Pound	2.977	.3350
Norway.....	Krone	.1502	6.658
South Africa.....	Rand	1.499	.6672
Sweden.....	Krona	.2090	4.785
Switzerland.....	Franc	.2487	4.021
United Arab Republic.....	Pound	2.467	.4049
United States.....	Dollar	1.074	.9313
Venezuela.....	Bolivar	.2390	4.184

By far the largest proportion of payments, and almost all large payments, are made by Canadians through the use of cheques drawn on their deposits. The chartered banks are by far the largest group of institutions offering chequeable deposits in which Canadians hold their savings. The thirty-five chartered bank clearing houses cashed cheques against individual accounts in 1963 valued at over \$360 billion.

### *Eight Banks Serve the Public*

By 1886 some thirty-eight banks, mostly operating locally or regionally, existed in Canada. Since the eve of the First World War the number of banks has been reduced to eight through failures, (the last of which was in 1923), mergers and amalgamations. Five of these banks have national branch systems. A novel feature in 1964 was the application by three groups for charters to establish new banks.

In developing the services of the banking business, Canadian banks have placed great emphasis on the liquidity and safety of their deposits and on the development of their branch system. As a result Canada is generously supplied with banking facilities. The chartered banks operate 5,576 branches across Canada, or about one for every 3,400 Canadians. The banks have also been active in expanding their international business and currently maintain 207 branches and agencies abroad compared with 175 in 1962 and 102 in 1946.

The chartered banks offer a range of deposit facilities, the most important of which are personal savings accounts on which interest is paid, and current accounts which do not draw interest. Both forms of deposits are freely transferable by cheque except that the banks may demand at least seven days' notice for withdrawal of deposits in savings accounts. The banks make loans to individuals and businesses, most of which are for a relatively short period. In recent years unsecured personal loans to individuals have become an increasingly important part of their total loans.

In addition, banks invest in securities of all levels of government and of a

broad range of Canadian corporations. They are limited in their investment in mortgage financing to loans approved by the Central Mortgage and Housing Corporation. Banks have not been large lenders in this field in recent years.

The following table shows some of the most significant asset and liability figures for the eight chartered banks.

**Statistics of the Chartered Banks of Canada at December 31, 1964**

Banks	Personal Savings Deposits	Total Deposit Liabilities	Total Loans Outstanding	Total Assets	Share-holders Equity
	\$'000	\$'000	\$'000	\$'000	\$'000
Royal Bank of Canada.....	1,931,181	5,410,119	2,974,598	5,998,896	324,320
Canadian Imperial Bank of Commerce.....	2,274,729	5,133,628	2,817,634	5,664,755	277,769
Bank of Montreal.....	1,971,401	4,515,464	2,633,588	4,857,047	220,308
Bank of Nova Scotia.....	1,001,015	2,850,779	1,877,530	3,049,475	140,214
Toronto-Dominion Bank....	1,040,176	2,488,349	1,451,497	2,689,945	123,065
Banque Canadienne Nationale.....	486,896	898,592	530,789	961,252	57,666
La Banque Provinciale du Canada.....	227,704	481,954	311,587	512,248	26,441
Mercantile Bank of Canada..	1,394	129,393	95,023	137,954	5,006
<b>Totals.....</b>	<b>8,934,496</b>	<b>21,908,278</b>	<b>12,692,246</b>	<b>23,871,572</b>	<b>1,174,789</b>

Under the Canadian constitution the Federal Government has authority over banking; the Parliament of Canada grants charters; and the banks are supervised by an officer of the Department of Finance known as the Inspector-General of Banks. The charters of the banks are renewed every ten years. Legislation amending the Bank Act, the Act regulating the banks and renewing the charters, will be considered by Parliament in 1965.

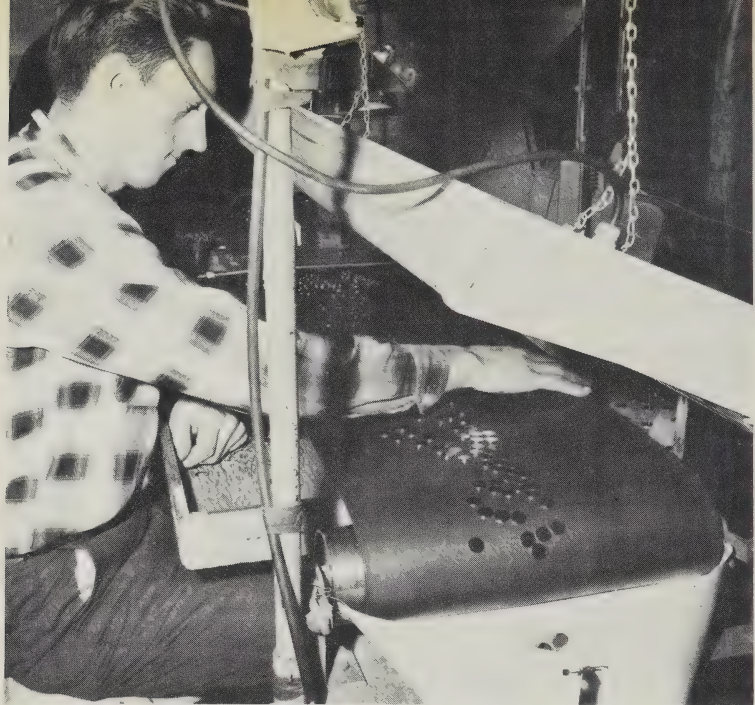
Other financial institutions which accept deposits are trust and mortgage loan companies, credit unions and caisses populaires, the Post Office Savings Bank, the Province of Ontario Savings Bank, the Treasury Branches of the Province of Alberta and the two Quebec Savings Banks—the Montreal City and District Savings Bank and La Banque d'Économie de Québec.

### *Competing Institutions*

While the chartered banks remain the dominant financial institutions in Canada, the recent post-war period has witnessed a rapid growth and development of competing institutions. Those enjoying the most rapid growth in recent years have been the trust companies and the mortgage loan companies of which there are approximately 74 companies operating close to 300 branches across Canada.

Both types of institution accept deposits and have been rapidly expanding their network of branches. While competing aggressively with the banks in attracting personal savings deposits, the largest proportion of their funds continues to be raised through the sale of debentures and investment certificates. The total assets of trust companies have been expanding at a rate about double that of the chartered banks. Mortgage loan companies have experienced a rate of growth between that of the trust companies and the banks.

A substantial proportion of the assets of both mortgage and loan com-



*In production at Sherritt-Gordon Mines, Ltd., Fort Saskatchewan, Alberta, is an order for some 100 million nickel coinage blanks for South Africa. Export markets consume 93 p.c. of the industry's yearly production which is valued at some 30 million dollars.*

panies are held in the form of mortgages. For mortgage companies, the investment in mortgages is their primary function. Trust companies, in addition, administer private and corporate pension funds and the estates of individuals, manage companies in receivership, act as financial agents for municipalities and corporations, and perform various other services for the public at large. Mortgage and trust companies may be licensed and supervised either by the federal Department of Insurance or by provincial authorities.

Another important and relatively new source of financing for Canadians is the credit unions and, in Quebec, the caisses populaires. While all but one of the eight chartered banks have been active in serving the financial needs of the Canadian economy since before the turn of the century, virtually all of the 4,800 caisses populaires and credit unions in Canada were founded during the past generation. The movement has now over three million members in its local societies, holds assets of about \$1.9 billion and has emerged as a significant part of the financial system. This growth has been due in large measure to the co-operative concept, the local character, and diversified services of individual credit unions and caisses populaires—a striking contrast to the development of many other institutions.

These organizations are co-operative savings and loans associations which are wholly controlled by the membership. The majority are federated with one of eighteen distinct leagues. Twenty-seven central credit societies have also been established for the purpose of pooling financial operations. Each society remains, however, essentially independent and conducts its affairs in ways best suited to its particular environment.

Sales finance and consumer loan companies are also active in providing a lending service. With assets of over \$4.3 billion they, too, play a significant role in Canada's financial system. They deal almost exclusively in cash loans to consumers. Their charges on loans under \$1,500 are regulated by the Federal Government.

### *Canadians Well Insured*

A popular way for Canadians to make longer term savings has been through the purchase of life insurance and annuities. Canadians, in general, are well insured compared with people in other countries, with an average of over \$11,000 of life insurance in force per household. Savings through life insurance companies on insurance and annuity business account for more than 25 per cent of personal savings.

The Canadian life insurance industry consists of over 200 companies and fraternal benefit societies, about half of which are federally-registered companies. This latter group of companies holds more than 90 per cent of the total assets of the industry. The total assets are well in excess of \$10 billion. Most of these companies, in addition to life insurance, sell policies covering expenses resulting from illness and compensate policyholders for wages not received. Insurance may be purchased from a registered insurance salesman or through a "group" plan at one's place of work.

In addition to those companies selling life insurance, there are more than 300 companies selling insurance for fire, theft, automobile damage and other casualties. The Federal Government also offers annuities to individuals and groups as do the governments of the provinces of Alberta and Saskatchewan.

In recent years long-term investors have had another alternative as mutual funds have grown in number, variety and size. These funds collect the savings of small savers, often on an instalment basis, for investment in a broad range of securities. They offer the investor management experience and the security of a broadly-based portfolio. There are now approximately 58 mutual funds serving Canadians with total net assets in excess of \$1.3 billion.

A particularly popular means of saving by Canadians in all ranks of life are the Federal Government's Canada Savings Bonds. They are sold annually each autumn through chartered and Quebec savings banks, investment dealers, trust companies, caisses populaires, Province of Ontario Savings Office, Alberta Treasury Office, and through payroll deduction plans at most places of work. Unlike most other types of financial securities they can be cashed at any time for their full face value plus accrued interest. Over the past few years some of the provinces have begun to issue savings bonds with characteristics similar to those of the Canada Savings Bonds.

### *Bank of Canada—Hub of Financial System*

At the hub of Canada's financial system is the central bank. The Bank of Canada was established in 1934, and was subsequently acquired by the Government of Canada for the purpose of regulating credit and currency in the best interest of the economic life of the country. The Bank of Canada



*Petrofina's polybutene plant in the Montreal area is the first of its type in Canada.*

influences the credit conditions and thus the environment in which the other financial institutions operate.

Important new legislation affecting the insurance, trust and loan companies was introduced into Parliament in 1964. The most significant aspect of this legislation was a series of new laws which would effectively prevent foreigners from gaining control over Canadian institutions operating in these fields. The Minister of Finance, at the time he introduced this legislation, announced that similar controls would be applied to the chartered banks.

### *Report of Royal Commission Published*

Another highlight during 1964 was the publication of the Report of the Royal Commission on Banking and Finance which provides Canadians with a most comprehensive survey and appraisal of the financial system in Canada. The Report describes in some detail the rapid growth and development of the financial institutions and markets in Canada. While the Commission made a number of recommendations for the further improvement of the system, its general conclusion might best be summed up in its own words:

"Canada's financial institutions and markets have evolved at a quickening pace in the last generation and have on the whole adapted well to the changing needs of borrowers and lenders."

### **Federal Finance**

Federal, provincial and municipal finances are becoming more and more interrelated. Although the British North America Act outlined certain basic relationships between the federal and provincial governments and gave each province the right to establish its own forms of municipal government to meet local needs, developments over the years have necessitated major changes in revenue and expenditure patterns.

Under the latest federal-provincial fiscal arrangements, for the period April 1, 1962 to March 31, 1967, the Federal Government reduced its personal

and corporate income tax rates from the 1961 levels and all provinces are levying personal and corporation income taxes for this five-year period. Ontario and Quebec continue to levy succession duties and British Columbia re-entered this field on April 1, 1963.

Many shared-cost programs aimed at reducing unemployment and improving government capital facilities have been introduced or extended in recent years.

Another major development in the joint financing of projects to promote increased employment in Canada was the passage in August 1963 of a federal Act setting up a Municipal Development and Loan Board to administer a \$400,000,000 loan fund for specified municipal capital works projects. To accelerate the commencement of new municipal projects, the Act provides for "forgiveness" of a portion of the loan if the works are completed by a specified date. Provincial approval of the proposed municipal projects is required before the federal loans may be made to the municipalities.

### *Plans for 1967*

Plans are unfolding for the celebration of the Centennial of Confederation in 1967. A Centennial Commission is administering federal grants to provinces and organizations for approved Centennial projects. The Canadian World Exhibition Corporation is planning the 1967 World Exhibition in Montreal. Facilities are being financed by federal, provincial (Quebec) and municipal (Montreal) funds.

In addition to the above projects, which must be carried out before a specified date, there are a number of programs of a continuing nature in which the Federal Government pays a predetermined share of the costs of provincial programs. For example, under the Hospital Insurance and Diagnostic Services Act, the Federal Government pays the provincial governments an amount equivalent to approximately half the provincial expenditures on provincially-operated hospital insurance schemes. Federal payments to the provinces under this Act amounted to \$392,000,000 in 1963-64. The Federal Government also shares the cost of providing unemployment assistance, blind pensions and disabled persons' allowances and many other programs.

A similar development has occurred in the provincial-municipal relationship. Provincial grants-in-aid and shared-cost contributions now provide a significant portion of total gross municipal revenue. Some provincial governments are now paying nearly half the cost of operation of local schools by way of substantial grants-in-aid. They also contribute toward local roads and health and welfare services. Some provinces also provide "unconditional" grants to their municipalities to be spent as they see fit.

The Government of Canada levies both direct and indirect taxes. Of the former, the income tax (individual and corporation) yields the largest return. Of the latter, excise taxes (including a general sales tax), excise duties and customs duties produce substantial revenues. Succession duties and some other taxes yield relatively minor amounts, and certain non-tax revenues are collected each year from financial transactions outside the tax fields. A 3 p.c. sales tax, a 3 p.c. individual income tax with a maximum figure, and a 3 p.c. corporation income tax are levied in addition to the regular

taxes from these sources as contributions to the Old Age Security Fund.

On October 16, 1963, Royal Assent was given to an Act to amend the Old Age Security Act, to increase the monthly pension from \$65 to \$75 effective October 1, 1963, and to raise the old age security tax, for which each individual is liable, from 3 p.c. to 4 p.c. of the taxpayer's taxable income for the year, with a maximum of \$120, applicable to the 1964 and subsequent taxation years. Early in 1965 a further change was made to make the pension payable at 65 instead of 70. The change is to be made in stages during the next five years. In January, 1966, the pension will be available to persons of 69, in 1967 to those of 68, etc. By 1970 all eligible persons of 65 will be entitled to the pension.

As explained above, commencing in 1962 the Federal Government partially withdrew for a five-year period from the personal and corporation income tax fields, and all the provincial governments are levying personal and corporation income taxes at least equal to, and in some cases greater than, the federal withdrawal.

The largest item of expenditure of the Government of Canada is for defence services. Other expenditures of major significance are made for health and social welfare, veterans' pensions and other benefits, transportation, natural resources and primary industries, and debt charges.

### Net General Revenue and Expenditure of the Federal Government, Year Ended March 31, 1963

Source	Revenue	Function	Expenditure
	\$'000		\$'000
Taxes—			
Income—		Defence services and mutual aid	1,596,134
Corporations.....	1,298,087	Veterans' pensions and other	
Individuals.....	2,018,276	benefits.....	337,761
Interest, dividends, and other		General government.....	289,540
income going abroad.....	129,137	Protection of persons and prop-	
General sales.....	1,108,210	erty.....	95,407
Excise duties and special excise		Transportation and communica-	
taxes—		tions.....	434,604
Alcoholic beverages.....	219,814	Health.....	425,376
Tobacco.....	383,553	Social welfare.....	1,565,043
Other commodities and		Recreational and cultural serv-	
services.....	37,889	ices.....	32,391
Customs import duties.....	644,992	Education.....	274,934
Estate taxes.....	87,143	Natural resources and primary	
Other.....	491	industries.....	357,095
Total Taxes.....	5,927,592	Trade and industrial develop-	
Privileges, licences and permits..	26,476	ment.....	15,757
Sales and services.....	62,617	National Capital area planning	
Fines and penalties.....	1,213	and development.....	18,389
Exchange fund profits.....	35,227	Loss on foreign exchange.....	9,115
Receipts from government enter-		Debt charges (excluding debt	
prises.....	107,084	retirement).....	754,940
Bullion and coinage.....	9,706	Payments to government enter-	
Postal service.....	222,359	prises.....	155,301
Other revenue.....	11,979	Payments to provincial and	
Non-revenue and surplus receipts.	22,751	municipal governments—	
Total Net General Revenue.	6,427,004	Federal-provincial fiscal ar-	
		rangements.....	202,295
		Other.....	106,418
		Other expenditure—	
		International co-operation	
		and assistance.....	56,892
		Postal service.....	218,828
		Other.....	187,748
		Non-expense and surplus pay-	
		ments.....	34,426
		Total Net General Expen-	
		diture.....	7,168,394

## Finances of the Federal Government, Years Ended March 31, 1868-1964

NOTE.—These figures are derived from the Public Accounts of Canada and differ from those in the preceding table. Revenue and expenditure in this table are on a gross basis and net debt here represents the excess of gross debt over net active assets.

Year	Total Budgetary Revenue	Per Capita Rev- enue <sup>1</sup>	Total Budgetary Expenditure	Per Capita Expend- iture <sup>1</sup>	Net Debt at End of Year	Net Debt per Capita
	\$	\$	\$	\$	\$	\$
1868.....	13,687,928	3.95	13,716,422	3.96	75,757,135	21.58
1871.....	19,375,037	5.34	18,871,812	5.21	77,706,518	21.06
1881.....	29,635,298	6.96	32,579,489	7.66	155,395,780	35.93
1891.....	38,579,311	8.07	38,855,130	8.13	237,809,031	49.21
1901.....	52,516,333	9.91	55,502,530	10.47	268,480,004	49.99
1911.....	117,884,328	16.87	121,657,834	17.40	340,042,052	47.18
1921.....	436,888,930	51.06	528,899,290	61.82	2,340,878,984	266.37
1931.....	357,720,435	35.04	441,568,413	43.26	2,261,611,937	217.97
1941.....	872,169,645	76.63	1,249,601,446	109.80	3,648,691,449	317.08
1951.....	3,112,535,948	226.99	2,901,241,698	211.58	11,433,314,948	816.14
1952.....	3,980,908,652	284.17	3,732,875,250	266.46	11,185,281,546	773.59
1953.....	4,360,822,789	301.60	4,337,275,512	299.97	11,161,734,269	751.88
1954.....	4,396,319,583	296.15	4,350,522,378	293.06	11,115,937,064	727.15
1955.....	4,123,513,300	269.74	4,275,362,888	279.67	11,263,080,154	717.49
1956.....	4,400,046,639	280.29	4,433,127,636	282.40	11,280,368,964	701.47
1957.....	5,106,540,880	317.55	4,849,035,298	301.54	11,007,651,158	662.71
1958.....	5,048,788,279	303.96	5,087,411,011	306.29	11,046,273,890	646.74
1959.....	4,754,722,689	278.38	5,364,039,533	314.05	11,678,389,860	667.99
1960.....	5,289,751,209	302.57	5,702,861,053	326.20	12,089,194,003	676.51
1961.....	5,617,679,854	314.36	5,958,100,946	333.41	12,437,115,095	681.93
1962.....	5,729,623,724	314.16	6,520,645,674	357.53	13,228,137,045	712.34
1963.....	5,878,692,431	316.57	6,570,325,358	353.81	13,919,769,972	736.65
1964.....	6,253,704,039	330.92	6,872,401,519	363.70	15,070,149,452	797.53

<sup>1</sup> Based on estimated population as at June 1 of the immediately preceding year.

<sup>2</sup> Based on estimated population as at June 1 of same year.

Revenue, expenditure and the net debt of the Government of Canada reached an all-time high in the year ended March 31, 1964. The net debt surpassed the previous record of \$13,920,000,000 attained at March 31, 1963, by more than \$1,000,000,000.

On March 31, 1939, the net debt amounted to 60.2 p.c. of the gross national product; by 1946 this had risen to 113.3 p.c. but by March 31, 1964, the net debt had declined to approximately 33 p.c. of the gross national product.

The outstanding unmatured funded debt (debentures and treasury bills) of the Government of Canada at March 31, 1964, amounted to almost \$18,740,000,000. The portion of the unmatured funded debt payable in Canada was 98 p.c., the portion payable in New York, 2 p.c.

## Provincial Finance

Net general revenue of provincial governments is estimated at \$3,851,-390,000 in 1964-65, and net general expenditure \$4,253,890,000.

Total tax revenue is expected to be \$2,527,500,000 for the fiscal year ended March 31, 1965, an increase of \$273,770,000 or 12 p.c. over the corresponding preliminary figures for the year ended March 31, 1964. Higher revenue from the general sales tax, from the increased taxes in certain provinces on motor fuel and fuel oil sales, together with larger revenues from



*More than half a million cars are produced annually in Canada. Road and rail services assist in their distribution.*

individual income taxes are the main factors contributing to these higher estimates.

Effective April 24, 1964, the provincial retail sales tax in Quebec was made uniform across the province at 6 p.c. The budget brought down on April 8, 1965, contained a new formula for the division of the tax among municipalities, and proposed to levy increased taxes on gasoline, diesel fuel, cigarettes and meals. It also proposed to introduce a new 6 p.c. tax on room rentals.

In Ontario the gasoline tax was increased by two cents per gallon to 15 cents per gallon, effective February 13, 1964. The tax on diesel fuel used in motor vehicles was increased to 20½ cents per gallon, an increase of two cents per gallon. Effective July 1, 1964, tax premiums under the Hospital Care Insurance Plan were increased from \$2.10 to \$3.25 monthly for a single person, and \$4.20 to \$6.50 monthly for a family unit. Effective with the 1964 registrations, the former scale of fees for passenger cars based on motor horse power was replaced by a flat rate of \$15, \$20, or \$25 for cars having four, six or eight cylinders. Ontario's budget of February 10, 1965, called for no tax changes. It gave education the largest share of the revenue.

In Saskatchewan for the calendar year 1964 there was a reduction in the premiums charged under the provincial medical care insurance and the hospitals' insurance plans. Premiums for the combined coverage have been reduced from \$72 a year to \$52 for families and from \$36 to \$26 a year for single persons.

Net general expenditures are estimated at \$4,254,000,000 in 1964-65, an increase of \$488,100,000 or 13 p.c. over the corresponding preliminary expenditure figures for the year ended March 31, 1964. Estimated expenditure on health and social welfare represents 28 p.c. of the total expenditure, education a further 28 p.c. and an additional 19.6 p.c. is allocated to transportation, mainly highways.

The expenditure on education continues to reflect the provinces' share of construction costs of vocational and technical training schools, the construction of which is again encouraged by the shared-cost contributions from the Federal Government.

### Analysis of Net General Revenue and Expenditure of Provincial Governments, Year Ended March 31, 1965<sup>1</sup>

Source	Revenue	Function	Expenditure
	\$'000		\$'000
<b>Taxes:</b>		Transportation and communica- tions (chiefly roads).....	832,640
Income—corporations.....	434,149	Health.....	851,100
individuals.....	450,525	Social welfare.....	340,190
Sales—general.....	659,010	Education.....	1,190,750
motor fuel and fuel oils.....	598,215	Natural resources and primary industries.....	239,560
other.....	83,155	Debt charges (exclusive of debt retirement).....	136,640
Succession duties.....	93,400	Contributions to municipalities (unconditional).....	156,290
Other.....	209,046	Other expenditure.....	506,720
<b>Total taxes.....</b>	<b>2,527,500</b>	<b>Total net general expendi- ture exclusive of debt     retirement.....</b>	<b>4,253,890</b>
<b>Government of Canada:</b>			
Statutory subsidies.....	23,580		
Federal-Provincial Fiscal Arrangements Act:			
Share of federal estate tax..	39,151		
Equalization (including sta- bilization).....	212,393		
Atlantic Provinces Adjust- ment Grants.....	35,000		
Newfoundland Additional Grant.....	8,000		
Share of income tax on power utilities.....	9,138		
<b>Total Government of     Canada.....</b>	<b>327,262</b>		
Privileges, licences and permits..	669,780		
Liquor profits.....	241,630		
Other revenue.....	85,218		
<b>Total net general revenue</b>	<b>3,851,390</b>		

<sup>1</sup> Estimated.

Direct and indirect debt of provincial and territorial governments, less sinking funds, amounted to \$9,184,000,000 at March 31, 1963, an increase of \$797,000,000 over the previous year. Direct debt at March 31, 1963 was \$4,504,000,000 or \$238 per capita and indirect (guaranteed) debt was \$4,680,000,000 or \$248 per capita.

### Net General Revenue and Expenditure of Provincial Governments, Year Ended March 31, 1965<sup>1</sup>

Province	Revenue	Expenditure	Province	Revenue	Expenditure
	\$'000	\$'000		\$'000	\$'000
Nfld.....	89,660	102,200	Man.....	146,840	177,920
P.E.I.....	20,670	23,560	Sask.....	223,020	221,590
N.S.....	124,480	141,660	Alta.....	320,600	333,320
N.B.....	103,070	118,130	B.C.....	400,210	404,600
Que.....	1,129,310	1,296,310	<b>Totals.....</b>	<b>3,851,390</b>	<b>4,253,890</b>
Ont.....	1,293,530	1,434,600			

<sup>1</sup> Estimated.



*Last year Dosco's Sydney plant with a payroll of \$23 million broke all its own records for production. The plant shipped \$70 million worth of products to twelve countries.*

## **Municipal Finance**

By authority of the British North America Act, 1867, municipal government in Canada is placed under the control of the provincial legislatures. Thus the powers of municipal governments are those given to them by the statutes of their respective provincial governments, except for the Yukon and Northwest Territories where some municipal powers have been assigned to certain localities by the Federal Government and the territorial councils.

The responsibilities delegated to municipalities, although varying from province to province, are largely those of raising revenue locally, of borrowing, and of providing the following services: roads and streets; sanitation; protection to persons and property such as policing, fire fighting, courts and jails; certain health and welfare services; and some recreation and community services. In most provinces, the municipalities are also responsible for levying and collecting the local taxation for school purposes but exercise little or no control over school administration or finance. In most of Quebec and in some minor localities in some other provinces, the school authorities levy and collect local taxes. In Newfoundland (except for local school tax area authorities which levy and collect school taxes in two municipalities) school boards, which are largely denominational, receive most of their funds from the provincial government.

The major revenue source available to municipalities, yielding over two thirds of the total, is the real property tax. It is supplemented in varying degrees by taxation of personal property, business and other taxes, fines,

licences and permits, public utility contributions and provincial grants and subsidies.

The issuance of municipal debt is limited by provincial legislation or regulations. More and more, provincial governments are aiding municipalities and schools in their capital projects by various methods, such as outright grants, loans, sharing of debt charges and assumption of debt.

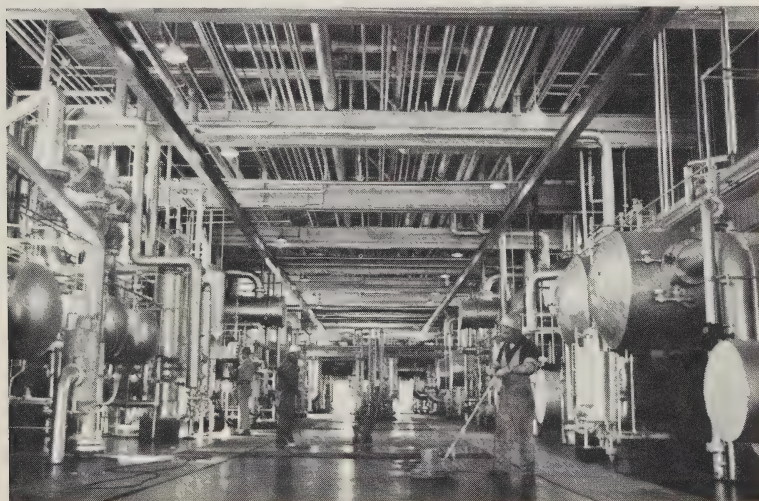
For the calendar year 1962 gross current revenue and expenditure of all municipal governments in Canada amounted to approximately \$2,077,000,000. For 1963 it is estimated to be in the neighbourhood of \$2,268,900,000.

As at December 31, 1962, total direct debt less sinking funds of municipal governments, including activities carried on under their authority or by bodies which are co-existent with the municipalities, amounted to \$5,644,000,000.

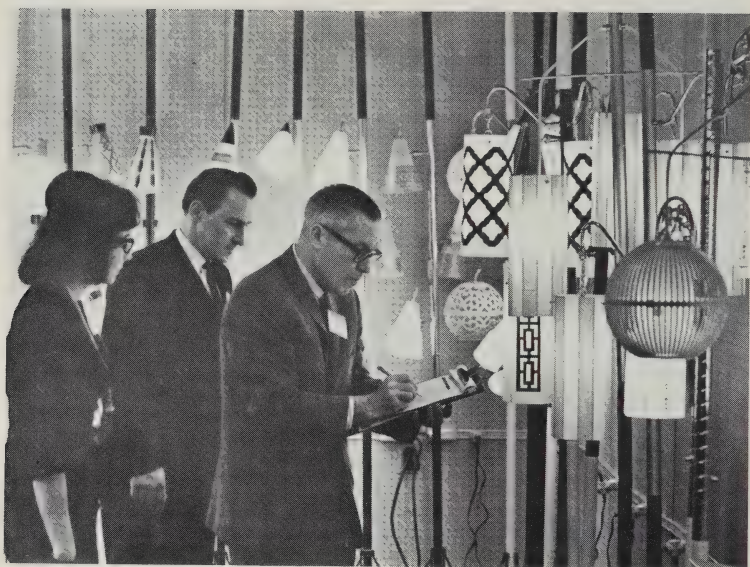
### Capital Investment

Capital expenditures in Canada are one of the most important measurements of economic activity in that they comprise more than 20 per cent of the gross national product and represent dynamic elements of the Canadian economy. The building of new homes by individuals, new factories and office buildings by business, new dams, roads, parks, and bridges by governments, all represent an investment in assets which can be used for the production of goods and services for consumption.

Studies of capital expenditures in Canada were made late in 1963 and at mid-year in 1964. At those times estimates were made of expected levels of outlays on new housing during 1963 and 1964. In addition, estimates were compiled of non-residential construction, machinery and equipment.



*Constant grooming keeps this processing plant in Calgary, Alberta, in spotless condition. Production of natural gas is now about ten times that of a decade ago. By 1963 annual production was more than a trillion cubic feet.*



*Factory shipments of furniture and furnishings in Canada have more than doubled in some ten years, rising to more than \$400 million in 1963.*

The 1964 capital expenditures were expected to reach a total of \$10,811,000,000, an increase of 16 per cent over the 1963 level. Outlays for construction, machinery and equipment purchases were expected to be, respectively, 15 per cent and 17 per cent higher than in 1963. In both value and volume terms, such a capital program would be the largest on record and would represent the sharpest year-over-year increase in such spending since 1956.

The accomplishment of such a large program is subject to supply considerations to some extent, especially in certain basic materials such as steel. Other factors in overall business conditions would include possible work stoppages, changes in prices, cost of borrowing and other circumstances which can influence the timing of the start of projects or the continuation of the original plans of additions, expansions or modernization of assets.

Business investment in 1964 was expected to increase by about 18 per cent. Among the major industry groupings, the largest increase was planned in manufacturing with a rise of 31 per cent anticipated. Much of this additional strength in manufacturing could be attributed to expansions of capacity in the paper industries, and in the steel and cement industries. More modest but still significant gains were indicated for transportation equipment, rubber and textiles. Most other sectors of business also planned sizeable increases in their program for 1964. Mining investment was expected to rise due to much higher outlays for iron ore developments. In the transportation sector, higher expenditures were recorded for urban transit systems, pipelines and railways.

The spending for social capital facilities in Canada was expected to increase in 1964 by about 10 per cent. The most important advance in this area was in outlays of provincial governments for new highway and bridge facilities. Elsewhere in social capital spending, the construction of new university and hospital facilities was estimated to be at a much higher level during 1964. Outlays for schools, on the other hand, were expected to be much below last year's level, reflecting the advanced stage of the large technical school building program.

Estimates for house-building in 1964 indicated a rise of almost 18 per cent over preceding year's figures. It was estimated that the new housing starts in 1964 would moderately exceed the 149,000 units of 1963. In this regard initiation of new apartment units was much stronger than expected earlier. In addition, the winter house-building incentive program was expected to lead to a high rate of starts late in the year.

### Private and Public Capital Expenditures, by Sector, 1960-64

Sector	1960	1961	1962	1963 <sup>1</sup>	1964 <sup>2</sup>
	\$'000,000				
<b>Business Capital (excluding Housing)</b>					
Forest and mineral products.....	863	818	996	1,000	1,382
Fuel and power.....	992	1,090	1,003	1,158	1,345
Trade, finance and commercial services.....	875	847	860	855	1,025
Transportation, storage and communication.....	990	829	811	931	986
Other.....	1,154	1,183	1,302	1,445	1,633
<b>Totals.....</b>	<b>4,874</b>	<b>4,767</b>	<b>4,972</b>	<b>5,389</b>	<b>6,371</b>
<b>Housing and Social Capital</b>					
Housing.....	1,456	1,467	1,587	1,713	2,015
Institutional services.....	573	616	834	856	806
Government departments and waterworks.....	1,359	1,322	1,322	1,354	1,619
<b>Totals.....</b>	<b>3,388</b>	<b>3,405</b>	<b>3,743</b>	<b>3,923</b>	<b>4,440</b>
<b>Total Capital Expenditures.....</b>	<b>8,262</b>	<b>8,172</b>	<b>8,715</b>	<b>9,312</b>	<b>10,811</b>

<sup>1</sup> Preliminary.

<sup>2</sup> Revised Intentions.

## Housing

Canada's housing production reached record levels in 1964 when construction was started on 165,600 new dwellings. The figure represented an increase of 11 p.c. over the 1963 total of 148,600 and surpassed by a small margin the previous high of 164,600 established in 1958. More housing units were also completed in 1964 than in any previous year. Completions totalled 151,000 units compared with 128,200 in 1963 and the previous record accomplishment of 146,700 dwellings in 1958.

For the first time, total investment in housing rose above the two billion-dollar figure to reach \$2,060,000,000, and exceeded by 20 p.c. expenditures in 1963.



*In 1964 housing reached new records in Canada in units started, completed, and under construction. This apartment building is in Halifax, Nova Scotia.*

### *Strong Demand for Rental Housing*

The sharp upswing in starts resulted from a continuing strong demand for rental accommodation which, for the first time, formed more than half the total annual housing output. Starts on apartments and row dwellings increased by 25 p.c. from the 1963 level to number 72,900 in municipalities of 5,000 population and over.

In the home-ownership sector, starts totalled 51,800 in the urban centers, virtually unchanged from 1963. Many, however, were concentrated in the early part of the year as a result of the Federal Government-sponsored winter house-building incentive program carried out for the first time in 1963-1964. Approximately 25,000 dwellings qualified under the scheme for the \$500 bonus payment offered to the owner or first purchaser of houses built during the usual off-season period. Because of the success of the program, the scheme was being repeated in the winter of 1964-65 and, in support of the measure, direct loans under the National Housing Act were again made available to builders without the usual pre-sale requirement.

Insured NHA mortgage loans by approved lenders and direct loans by CMHC were provided for 58,100 new dwellings in 1964, an increase of 3 p.c. over the volume of lending in 1963 when loans were approved for 56,300 units.

The average cost of a bungalow financed under the Act in the third quarter of 1964 was \$15,936 compared with \$15,310 a year earlier. The overall cost included an average of \$2,837 for the building lot, \$12,821 for construction, and \$278 for other charges. The maximum amount available for home-ownership loans was unchanged during the year with a ceiling of \$15,600 for dwellings having four or more bedrooms and \$14,900 for those with three bedrooms or less.

### *Federal Assistance for Urban Renewal*

Broadened federal assistance to aid provinces and municipalities undertaking programs of urban renewal was authorized by amendments to the NHA in June 1964. Supplementing existing provisions for urban renewal studies, the amendments permitted federal contributions, equal to half the costs involved, for the preparation of urban renewal schemes setting out

detailed programs of redevelopment and rehabilitation. In addition to meeting 50 p.c. of the cost of the actual implementation of renewal schemes, the revisions also provided for federal loans to provinces or municipalities representing two thirds of their share of the costs incurred. Mortgage loans under the home-ownership facilities of the Act were extended to owners of existing residential properties in urban renewal areas to promote the conservation and improvement of soundly-constructed dwellings in these neighborhoods. Such loans may be utilized for the purchase, sale, improvement or refinancing of existing dwellings.

During the year, federal grants for urban renewal studies were approved for Preston and Eastview, Ontario; Glace Bay and Dartmouth, Nova Scotia; and Prince Albert, Saskatchewan. The Federal Government also undertook to share the costs involved in the preparation of urban renewal schemes for Hamilton and Vancouver.

Grants totalling nearly \$13,000,000 were authorized during 1964 to assist in implementing renewal schemes in Kingston, Hamilton, Toronto and Vancouver.

### *Changes in Public Housing Act*

The June amendments also made significant changes in the provisions of the Act concerned with public housing. As an alternative to the existing arrangements for joint federal-provincial participation in the development of public housing projects, long-term loans equal to 90 p.c. of the cost of these developments may be made to provinces—or to a municipality or public housing agency with the approval of the province. Loans in the same percentage may also be authorized for the assembly of land for future housing projects and the Federal Government has undertaken to share equally any

*A street scene in Arvida, Quebec. The city was founded in 1926 by the Aluminum Company of Canada.*



losses incurred in the operation of loan-assisted developments. The revisions to the Act permit the inclusion of dormitory or hostel accommodation for individuals of low income as well as self-contained units for family occupancy.

Five public housing projects were approved in 1964 under the federal-provincial partnership arrangements. Two of the developments were for 564 units in Vancouver. The others were in Halifax, 184 units; Hamilton, four units (a pilot rehabilitation project); and Swift Current, 20 units. Federal-provincial land assembly projects for the development of serviced building lots were approved for Swift Current, 116 lots, and Wawa, Ontario, 68 lots.

Thirty-nine loans, in an aggregate amount of \$11,500,000 were approved to limited-dividend and non-profit companies to aid in the construction of 1,795 self-contained dwellings for low-income families and hostel accommodation for 186 persons. Ontario and Manitoba each received loans for 11 projects while nine were to be built in British Columbia and four each in New Brunswick and Saskatchewan.

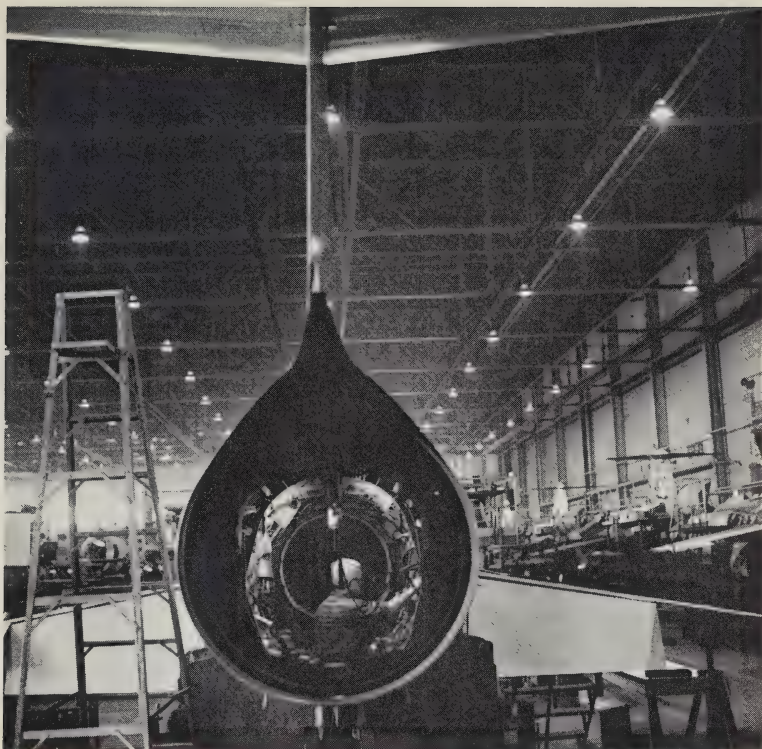
Requests for federal loans for sewage treatment projects were approved for 219 municipalities during the year in a total amount of \$26,800,000. The partial debt cancellation feature of the loans was extended by the 1964 amendments to apply to work completed by March 31, 1967. Assistance available for university housing projects was also widened to provide for the financing of family housing units for married students in addition to dormitory accommodation for single students. Besides the universities and colleges themselves, co-operative associations and charitable corporations also became eligible for loans for university projects. During the year, 22 loans totalling almost \$40,000,000 were approved for the construction of living quarters for 7,308 students.

Federal measures to promote the development of a secondary mortgage market in Canada continued throughout the year with the sale, by auction, of \$100,000,000 worth of insured NHA mortgages to private investors. The sales brought to \$248,250,000 the overall value of mortgages purchased by investors from CMHC's saleable portfolio of mortgages. The sales' program is designed to open investment opportunities in insured mortgages to institutions unable to initiate loans of this type and to reduce the necessity for heavy investment of public funds in residential construction.

### *Grants for Research*

Over \$1,000,000 in federal grants was made available to organizations and individuals during the year to assist in carrying out research programs in the field of housing and community planning. Grants to organizations included those to the Canadian Housing Design Council, the Community Planning Association of Canada, the Ontario Research Foundation, the National House Builders Association, the Canadian Council on Urban and Regional Research, the Social Planning Council of Metropolitan Toronto and the Division of Building Research of the National Research Council.

Assistance to individuals was provided mainly through a program of fellowships, bursaries and travel scholarships sponsored by Central Mortgage and Housing Corporation to aid university students taking courses in various fields associated with housing development and town planning.



*A technician at work on a CF-104, Montreal. There were 23 aircraft and parts manufacturers in Canada each employing 200 or more persons in 1961.*

## Labour Force

# Participation Pattern Changes

In 1964, the population of Canada 14 years of age and over averaged 12,745,000. Of this total, 6,920,000, or 54.3 p.c., were in the labour force. This compares with a labour force participation rate of 54.0 p.c. in 1963.

Men in the labour force numbered 4,960,000, or 78.4 p.c. of the male population of working age, and women 1,960,000, or 30.5 p.c. of the female population of working age. Men 25 to 64 years of age accounted for more than three quarters of the total male labour force and women in the same age group for about two thirds of the total female labour force.

The pattern of labour force participation in recent years has been a slowly but steadily declining rate for men and a rapidly rising rate for women. Some contributing factors to these developments have been the increase in the number of pension plans, prolonged school attendance and the increase in the number of women remaining in or re-entering the labour force after marriage.

### The Labour Force<sup>1</sup> by Age and Sex 1964 Annual Averages

Age Group	Men			Women		
	Number	Distribution	Participation Rate <sup>2</sup>	Number	Distribution	Participation Rate <sup>2</sup>
	'000	p.c.		'000	p.c.	
<b>Total 14 years and over . . .</b>	<b>4,960</b>	<b>100.0</b>	<b>78.4</b>	<b>1,960</b>	<b>100.0</b>	<b>30.5</b>
14-19 . . . . .	391	7.9	38.3	296	15.1	29.9
20-24 . . . . .	567	11.4	88.2	338	17.2	50.9
25-44 . . . . .	2,289	46.2	97.7	754	38.5	31.7
45-64 . . . . .	1,541	31.1	91.9	526	26.8	31.6
65+ . . . . .	171	3.4	26.6	46	2.3	6.4

<sup>1</sup> Excludes inmates of institutions, members of the Armed Services, Indians living on reserves and residents of the Yukon and Northwest Territories.

<sup>2</sup> The labour force participation rate for any group is the percentage of the total population in that group in the labour force.

Total employment in 1964 averaged 6,595,000, an increase of 231,000, or 3.6 p.c. from the preceding year. Of the total employed, 4,696,000 were men and 1,899,000 were women. Compared with the returns a year earlier the increase in employment was numerically greater for men (129,000) than for women (102,000), but the percentage change was greater for women (5.7) than for men (2.8).

In 1964, three out of four employed men were married as were one half of all employed women. In recent years, the proportion of married women employed has been rising steadily.

### Employment by Marital Status and Sex 1964 Annual Averages

Marital Status	Men		Women	
	'000	p.c.	'000	p.c.
<b>Total . . . . .</b>	<b>4,696</b>	<b>100.0</b>	<b>1,899</b>	<b>100.0</b>
Single . . . . .	1,053	22.4	728	38.3
Married . . . . .	3,556	75.7	983	51.8
Other . . . . .	87	1.9	188	9.9

The number of persons employed in agriculture in Canada was 624,000 in 1964 compared with 641,000 in 1963. This year-to-year decrease is a continuation of a long-term trend. Agricultural employment continued to be concentrated in the Prairie region while the Atlantic region and British Columbia together accounted for less than 10 p.c. of the Canada total. Ontario and Quebec together accounted for two thirds of total employment in non-agricultural industries.

The proportion of persons employed in industries producing goods has been gradually declining. In 1964, the number of persons so employed represented 45 p.c. of total employment compared with more than 50 p.c. a few years earlier. This was due principally to the decline in agriculture, the slow



*A fireboat owned by the Vancouver Fire Department tests its equipment.*



*A tellurometer and theodolite are used in survey measurements.*

*Snow blowers quickly clear highways.*



rate of growth in the other primary industries and the rapid rise in job opportunities in the service industry, particularly for women.

Manufacturing employed the greatest number of men in 1964 (1,347,000); and the service industry the largest number of women (917,000). Three industries, manufacturing, trade and service accounted for 62 p.c. of all employed men and 86 p.c. of all employed women.

### Employment by Region 1964 Annual Averages

Region	Agriculture		Non-agriculture	
	'000	p.c.	'000	p.c.
<b>Canada</b> .....	<b>624</b>	<b>100.0</b>	<b>5,972</b>	<b>100.0</b>
Atlantic.....	40	6.4	526	8.8
Quebec.....	113	18.1	1,702	28.5
Ontario.....	158	25.3	2,301	38.5
Prairies.....	292	46.8	856	14.3
B.C.....	21	3.4	587	9.8

### Employment by Industry 1964 Annual Averages

Industry	Number	P.C.
	'000	
<b>All Industries</b> .....	<b>6,595</b>	<b>100.0</b>
Agriculture.....	624	9.5
Other primary industries.....	195	3.0
Manufacturing.....	1,702	25.8
Construction.....	449	6.8
Transportation and other utilities.....	528	8.0
Trade.....	1,067	16.2
Finance.....	264	4.0
Service <sup>1</sup> .....	1,768	26.8

<sup>1</sup> "Service" includes community, government, personal, business and recreational services.

The number of unemployed persons averaged 325,000 in 1964, including 264,000 men and 61,000 women. For men, there was a decrease of 48,000 from a year earlier but for women there was no change. Unemployment was also lower than it was a year earlier in all regions.

On an annual average basis, the unemployment rate in the Atlantic and Ontario regions was the lowest since 1956. For Canada and the other regions it was the lowest since 1957.

### Unemployed by Region 1964 Annual Averages

Region	Number	Per cent of the labour force
	'000	
<b>Canada</b> .....	<b>324</b>	<b>4.7</b>
Atlantic.....	48	7.8
Quebec.....	123	6.3
Ontario.....	83	3.3
Prairies.....	36	3.0
B.C.....	34	5.3



*Potatoes are prepared for frying and packaging. New Brunswick produced the greatest quantity of potatoes in Canada in 1963.*

## **National Employment Service**

The National Employment Service, formerly under the direction of the Unemployment Insurance Commission, came under the Department of Labour on April 1, 1965. It provides a public employment service on a national basis to all workers and employers in Canada. Its main purpose is to organize the labour market in the most effective manner in bringing together employers and work seekers.

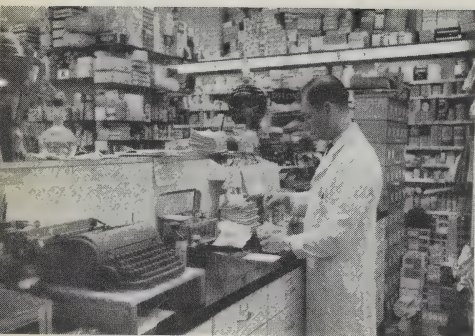
Important features of the National Employment Service operations are the employment counselling service to those entering or re-entering employment, the counselling and selective placement service to handicapped workers and the specialized employment service to employers and workers in the executive and professional fields. During the year ending September 30, 1964, the 200 local National Employment Service offices effected 1,218,000 placements in vacancies listed with the National Employment Service by employers. Included in this total were 58,800 placements which involved movement of workers to employment in other than their area of residence. In the same period 265,600 counselling interviews were accorded workers entering or re-entering the employment market.

## **Labour Legislation**

In Canada a large body of labour law establishes minimum terms and conditions of employment and regulates relations between employers and trade unions. The majority of such laws are within the provincial field of responsibility, but federal labour laws apply to an important group of inter-provincial industries, mainly transportation and communication.

Laws dealing with wages and wage security are important to many employees. All provinces are now active in the minimum wage field and, with one exception, set minimum rates for workers of both sexes.

Minimum rates have not yet been set for male workers in Nova Scotia, but a new Minimum Wage Act passed in 1964 gives authority to set rates for both sexes. In Ontario, in 1964, new orders were issued extending to all parts of the province the minimum wage program initiated in 1963 with orders for the Oshawa-Toronto-Hamilton zone. The orders provide for the



*Pharmacists play an important role in the health of the nation. Each province has its own Pharmacy Act and its own pharmaceutical licensing body.*

establishment by December 27, 1965 of a province-wide general minimum wage of \$1 an hour for workers of both sexes and of a minimum wage of \$1.25 an hour for construction workers.

These rates are being put into effect by stages. In New Brunswick industry orders, effective January 1, 1965, extended coverage to the majority of male workers for the first time. Rates set by these orders range from 65 cents an hour for the service industries to \$1.05 an hour for construction, mining, primary transportation, logging and sawmills.

In other provinces general minimum rates vary from 50 cents to \$1 an hour. Rates in excess of \$1 have been set for a number of skilled occupations in British Columbia and, in a few instances, in some other provinces. In the majority of provinces a lower rate than the general minimum applies during a probationary period of employment.

In recent years wage payment and collection laws have been tightened in a number of provinces, particularly in Saskatchewan and British Columbia. These laws, which vary as to the type of protection provided, deal with such matters as the manner and frequency of payment of wages, the furnishing of bonds or other security for the payment of wages by certain employers, and provision for the collection of unpaid wages.

### *Equal Pay for Equal Work*

Equal pay Acts in eight provinces, and a federal law applying to industries subject to regulation by Parliament, establish the principle of equal pay for men and women for substantially similar work, and provide a procedure under which a woman may make a complaint that her employer is not observing this principle in his establishment. If, on investigation, a complaint is found to be justified, the employer will be required to remedy the matter. In Quebec legislation passed in 1964 prohibits discrimination in employment on the basis of sex.

Minimum wages and maximum hours of work are set for specified industries in defined areas under the Quebec Collective Agreement Act and under industrial standards, or similar laws, in seven provinces. Under this legislation, standards agreed upon by the major part of the industry may be applied by government order to the whole industry.

## *Hours of Work and Vacations*

Five provinces have laws of general application regulating hours of work. Government regulation of hours of work takes two different forms. The laws of Alberta, British Columbia and Ontario set a maximum number of hours per day and per week (8 hours in a day and 44 or 48 in a week) beyond which an employee must not work. The Manitoba and Saskatchewan Acts regulate hours through the requirement that an overtime rate of one and one-half times the regular rate must be paid if work is continued beyond specified daily and weekly hours (in Manitoba, 8 and 48 hours (men) and 8 and 44 hours (women); in Saskatchewan, 8 and 44 hours). In some provinces working hours of certain classes of employees are regulated under other statutes.

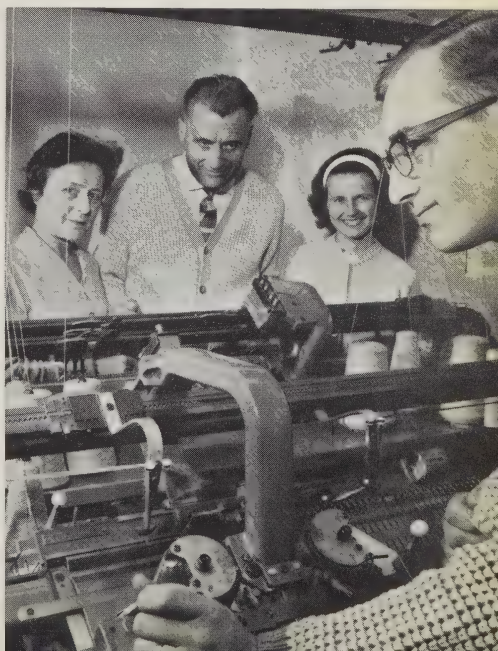
Workers are entitled to an annual vacation with pay after a specified period of service under eight provincial laws and a federal law. For employees in undertakings subject to the jurisdiction of Parliament the vacation provided is one week after one year of service and two weeks after two years.

In New Brunswick, Nova Scotia, Ontario and Quebec, a worker is entitled to a vacation with pay of one week after a year of employment; in Alberta, British Columbia, Manitoba and Saskatchewan, an employee must be granted a two weeks' vacation with pay after working one year. The Saskatchewan Act further provides for a three weeks' vacation after five years' service with the same employer.

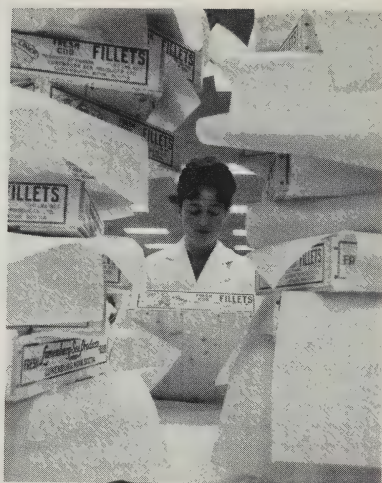
## *Safeguards Provided*

Legislation setting minimum standards to be observed in industrial workplaces so as to secure the safety and health of employees has been revised in recent years and new safeguards provided to protect workers from the hazards of modern industrial processes and equipment. Ontario enacted the

*Typical of the thousands of highly-skilled newcomers who have established industries in Canada since World War II is this German immigrant who has built a thriving business producing bulky-knit sports sweaters.*



*Thousands of pounds of fillets are shipped annually from Lunenburg, Nova Scotia, but manufacturing is the province's leading industry, exceeding fishing by a six-to-one ratio.*



Industrial Safety Act, 1964, involving a thorough revision and updating of its factory legislation. The New Brunswick Industrial Safety Act was also revised and its application extended.

Compensation for disablement caused by a work accident or industrial disease is provided under a workmen's compensation law in each province applying to a wide range of industries and occupations. Compensation is paid at the rate of 75 p.c. of average earnings, subject to the provision that earnings above a specified maximum may not be taken into account. The ceiling on annual earnings in the various Acts ranges from \$4,000 to \$6,000.

After the period of temporary disability is over, any permanent disability resulting from the accident is determined, and an award made in the form of a life pension or a lump sum. In fatal cases, dependants are paid fixed monthly amounts. Compensation and medical aid are paid from an accident fund to which employers are required to contribute and which provides a system of mutual insurance. Federal laws provide compensation for certain seamen and for employees of the federal public service.

All provinces have apprenticeship laws providing for an organized procedure of on-the-job and school training in designated skilled trades. Provision is also made in the majority of provinces for the issue of certificates of qualification to tradesmen in certain trades on a voluntary basis. In some provinces it is compulsory for certain classes of tradesmen to hold a certificate of competency.

Federal and provincial labour relations Acts assert the right of workers to join trade unions, place an obligation on an employer to recognize and deal with a representative trade union, and set out the rules of conduct that apply to the trade union, the employees and the employer in the collective bargaining relationship.

The worker's right to organize is effectively protected by provisions which prohibit an employer from discriminating against an employee for union activity or from interfering in trade union affairs.

## *Functions of Labour Relations Boards*

The main function of the labour relations boards which operate in each province and in the federal field of jurisdiction is to determine whether a trade union has the support of the majority of employees it claims to represent and whether the proposed unit of employees is appropriate for collective bargaining. Once the board has satisfied itself on these points and has certified a union as the exclusive bargaining agent of the employees, there is an obligation on the employer and the trade union to negotiate with a view to concluding a collective agreement.

The terms agreed upon in negotiation are set down in a collective agreement which is binding on both parties and upon the employees in the bargaining unit for a period of at least a year and sometimes two or three years. While the agreement is in force, disputes are required to be settled by a grievance procedure culminating in arbitration, and a work stoppage is prohibited.

If, during negotiations, the parties are unable to conclude a collective agreement, they must make further efforts with the assistance of a government conciliation officer and, if the difference still remains unresolved, it may be referred to a tripartite conciliation board. Not until all the procedures prescribed for reaching a settlement have been complied with are the parties free to engage in a strike or lockout.

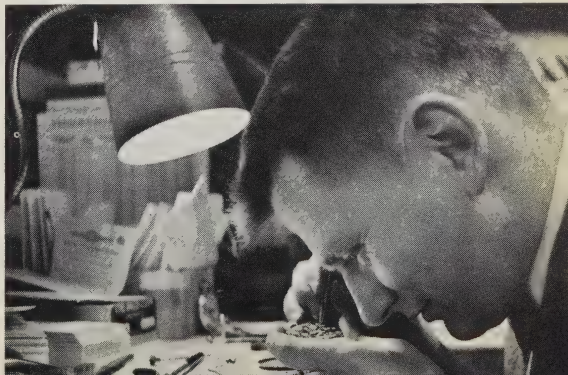
In Quebec the labour relations legislation was replaced in 1964 by a new Labour Code which now applies to virtually all workers in the province and which removed a number of restrictions which previously applied to certain groups of public service employees.

In some provinces certain classes of employees engaged in essential services such as firemen, policemen or hospital employees, are subject to special provisions for dispute settlement. For these employees, if agreement cannot be reached on wages and other working conditions, the issues are determined by final and binding arbitration.

## *Prohibitions Against Discrimination*

In seven provinces and in the federal field of jurisdiction, fair employment practices Acts prohibit discrimination in employment or in trade union membership on grounds of race, colour, religion or national origin and provide a means of redress.

*Skilled jewellers find steady employment in Canada. Quebec, Ontario, Manitoba and British Columbia have schools for the training of watchmakers. Workers may be certified as members of the Canadian Jewellers Institute after passing an examination.*



The British Columbia Act was amended in 1964 to forbid discrimination in employment on grounds of age with respect to persons between the ages of 45 and 65. Six provinces also have Acts providing that places to which the public is customarily admitted must be open to all without regard to race, colour, religion or national origin and, in Quebec, discrimination by owners or keepers of hotels, restaurants or camping grounds is prohibited. In Nova Scotia and Ontario, discrimination is also forbidden in the rental of apartments.

### *Average Weekly Hours and Wages*

Hours of work of hourly-rated wage-earners have declined since 1945, generally by less than 5 p.c., except in construction where materials and labour shortages limited activity in the immediate post-war years. The average for all hourly-rated wage-earners in 1964 was slightly more than 40 hours per week. Small year-to-year differences between 1963 and 1964 reflect changing amounts of overtime and short time rather than changes in the standard work week.

A relatively steady increase in average weekly wages has been maintained. Wages in manufacturing, mining and service have more than doubled while those of construction have now reached three times the 1946 level. Rates of increase have varied in major industries and in different provinces with area disparities resulting largely from variations in the industries represented. Increases have been somewhat greater in the three Western provinces than elsewhere. Between 1963 and 1964 weekly wages, on the average, increased by more than 3 p.c.

### **Average Weekly Hours and Wages of Hourly-Rated Wage-Earners in Specified Provinces and Industries, 1946, 1963 and 1964**

Note: These statistics, relating to the last pay periods in the month, are calculated from monthly returns furnished by establishments usually employing 15 persons and over.

Industry and Province	Average Weekly Hours			Average Weekly Wages			Change in Average Hours in 1964 <sup>1</sup> from		Change in Average Wages in 1964 <sup>1</sup> from	
	1946	1963	1964	1946	1963	1964	1946	1963	1946	1963
	No.	No.	No.	\$	\$	\$	p.c.	p.c.	p.c.	p.c.
<b>Industry</b>										
Mining.....	42.7	42.0	42.3	37.53	94.12	97.12	- 0.9	0.7	158.8	3.2
Manufacturing.....	42.7	40.8	41.1	30.15	79.40	82.61	- 3.7	0.7	174.0	4.0
Durable goods.....	42.8	41.3	41.7	33.00	87.25	90.74	- 2.6	1.0	175.0	4.0
Non-durable goods.....	41.8	40.3	40.6	26.92	71.90	74.68	- 2.9	0.7	177.4	3.9
Construction.....	38.4	40.8	41.2	29.53	87.51	91.77	7.3	1.0	210.8	4.9
Services <sup>2</sup> .....	43.1	37.7	37.3	20.08	43.21	44.44	-13.5	-1.1	121.3	2.8
<b>Provinces—</b>										
<b>Manufacturing</b>										
Newfoundland.....	..	40.4	40.9	..	68.19	69.89	..	1.2	..	2.5
Prince Edward Island.....	45.8	39.5	40.6	20.93	46.36	49.50	-11.4	2.8	136.5	6.8
Nova Scotia.....	43.4	40.5	41.2	29.86	68.30	71.70	- 5.1	1.7	140.1	5.0
New Brunswick.....	45.2	41.0	41.4	29.19	67.65	69.62	- 8.4	1.0	138.5	2.9
Quebec.....	44.6	41.5	41.9	28.95	72.69	75.58	- 6.1	1.0	161.1	4.0
Ontario.....	41.8	40.9	41.3	35.53	83.84	87.45	- 1.2	1.0	146.1	4.3
Manitoba.....	42.1	40.0	40.4	33.60	72.23	73.64	- 4.0	1.0	119.2	2.0
Saskatchewan.....	41.9	38.8	39.2	29.54	78.99	81.58	- 6.4	1.0	176.2	3.3
Alberta.....	42.1	39.7	40.1	30.52	80.28	82.83	- 4.8	1.0	171.4	3.2
British Columbia.....	40.3	37.8	38.0	34.30	89.69	92.72	- 5.7	0.5	170.3	3.4

<sup>1</sup> Estimated on the basis of statistics available for 8 months of 1964.

<sup>2</sup> Mainly hotels, restaurants, laundries and dry-cleaning establishments.

.. Signifies not available.

## Unemployment Insurance

In July 1940, an Unemployment Insurance Act provided Canada with a contributory scheme of unemployment insurance and a nation-wide free employment service. Administration of the Act is entrusted to an Unemployment Insurance Commission, consisting of a Chief Commissioner and two commissioners—one appointed after consultation with organized labour and one after consultation with employers. Regional and local offices strategically located across the country handle applications for employment and claims for unemployment insurance benefit. Persons applying for unemployment insurance benefit are required first to register with the National Employment Service.

Coverage is compulsory. All persons employed under a contract of service are insured unless specifically excepted. Exceptions include such employments as agriculture, domestic service, school teaching and those employed on other than an hourly, daily, piece or mileage basis with annual earnings exceeding \$5,460. Persons employed on an hourly, daily, piece or mileage basis are insured regardless of earnings level.

As of June 1964 it was estimated that about 80 p.c. of non-agricultural paid workers came under the scope of the Act. Equal contributions are required from employers and employees, the specific amount to be determined by the weekly earnings of the employee. The Federal Government adds one fifth of this total and pays administration costs. In order to protect, in some measure, the standard of living of the wage-earner when unemployed, the weekly benefit rate is related to the weekly contribution which varies between defined earnings classes. The contribution schedule contains 12 classes, ranging from 10 cents where weekly earnings are under \$9.00 to 94 cents in respect of weekly earnings of \$69.00 or over. Maximum weekly benefit rates are \$27.00 to persons claiming at the single person rate and \$36.00 for those with dependants. Maximum entitlement in dollars is a function of previous contributory employment and the current weekly benefit rate. An allowable earnings' feature provides automatic adjustment of weekly benefit where earnings in a week exceed 50 p.c. of the claimant's benefit rate.

*Constant reports of weather conditions meet the demands of the public and industry. In January, 1964, official meteorological observations were recorded at some 2,230 weather reporting stations.*



The Act contains a special provision whereby the usual contribution requirements are relaxed somewhat during a 5½-month period commencing with the first week of December each year. During this interval workers unable to fulfil the normal requirements for benefit may draw seasonal benefit if they have at least 15 weeks in insured employment during the fiscal year, or have terminated benefit since the previous mid-May. During the period December 1, 1963 to May 16, 1964 about 40 p.c. of the benefit periods established were identified as "seasonal benefit periods".

### Estimates of the Insured Population under the Unemployment Insurance Act, August 1963–August 1964

End of Month of—	Total	Employed	Claimants
	No.	No.	No.
1963—August.....	4,132,000	3,939,500	192,500
September.....	4,122,000	3,935,700	186,300
October.....	4,125,000	3,906,100	218,900
November.....	4,192,000	3,888,600	303,400
December.....	4,326,000	3,793,700	532,300
1964—January.....	4,334,000	3,735,400	598,600
February.....	4,339,000	3,731,900	607,100
March.....	4,348,000	3,750,700	597,300
April.....	4,280,000	3,782,300	497,700
May.....	4,173,000	3,922,900	250,100
June.....	4,241,000	4,039,100	201,900
July.....	4,271,000	4,065,700	205,300
August.....	4,330,000	4,148,000	182,000

During the 12 months ending September 1964, a total of 1,915,000 initial and renewal claims for benefit were filed at local offices. On the average, 364,000 persons were on claim at the end of each month during this period. Benefit payments amounted to \$351,200,000. For the 12 months ending September 1963 comparable data were 2,095,000 claims filed, 414,500 claimants and payments amounting to \$401,100,000.

*Aerial view of the harbour and steel mill, Hamilton, Ontario.*





*The construction of by-passes in the neighbourhood of great metropolitan centres is almost a necessity for the motoring public. This link is on Highway 401 in the Toronto area.*

## Labour Organizations in Canada

Membership in labour organizations active in Canada totalled approximately 1,493,000 at the beginning of 1964—an increase of 44,000 over membership figures for the previous year.

Three quarters of the members were in unions affiliated with the Canadian Labour Congress; more than eight per cent as affiliates of the Confederation of National Trade Unions; and approximately 16 per cent as members of un-affiliated national, international and independent local organizations.

Of the 1,493,000 union members, 1,062,000 were in international unions which had branches both in Canada and the United States. National unions had some one quarter of the over-all union membership.

Together, international and national unions had 1,427,580 members distributed among 163 unions with memberships from fewer than 10 members to the 102,000 reported by the Steelworkers.

Listed below were the 1964 unions with the largest number of members:

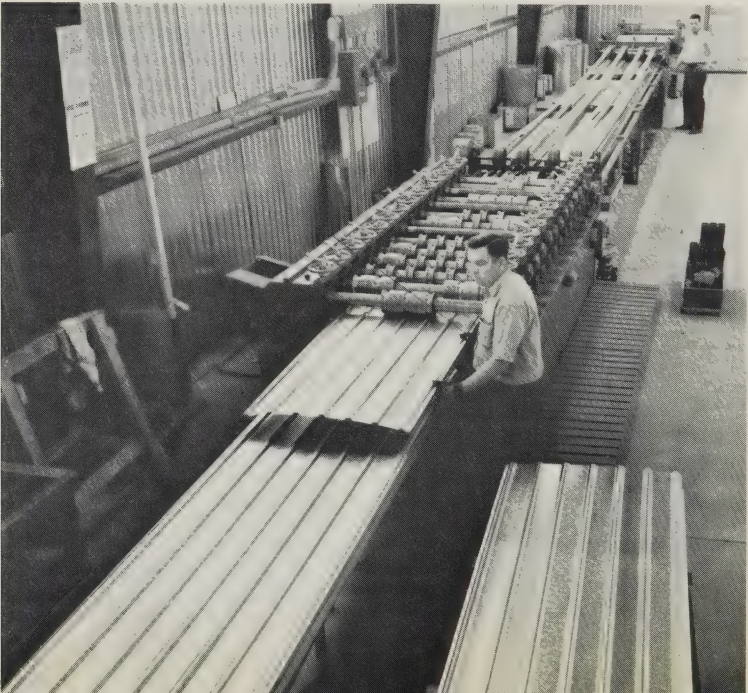
<u>Union</u>	<u>1964 Membership</u>
1. United Steelworkers of America (AFL-CIO/CLC) . . .	102,000
2. Canadian Union of Public Employees (CLC) . . . . .	86,100
3. International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (AFL-CIO/CLC) . . . . .	63,600
4. United Brotherhood of Carpenters and Joiners of America (AFL-CIO/CLC) . . . . .	57,100

<u>Union</u>	<u>1964 Membership</u>
5. International Association of Machinists (AFL-CIO/CLC) . . . . .	39,800
6. International Woodworkers of America (AFL-CIO/CLC) . . . . .	39,200
7. International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.) . . . . .	38,200
8. International Brotherhood of Electrical Workers (AFL-CIO/CLC) . . . . .	36,600
9. International Brotherhood of Pulp, Sulphite and Paper Mill Workers (AFL-CIO/CLC) . . . . .	36,100
10. Canadian Brotherhood of Railway, Transport and General Workers (CLC) . . . . .	35,800

For the week ended March 20, 1965, the labour force of Canada showed 6,521,000 employed and 387,000 unemployed. This represented the population 14 years of age and over, exclusive of inmates of institutions, members of the Armed Services, Indians living on reserves and residents of the Yukon and Northwest Territories.

Employed men numbered 4,581,000; employed women, 1,940,000.

*Machines process aluminum rolls into uniform sheets of material for use in the building trades.*





*An abundance of medical attention is available for this small patient as students attend a clinic class at the Montreal Children's Hospital.*

## Health and Welfare

# Comprehensive Program Planned

In the administration of health services in Canada, the various health professions, hospitals and other institutions, government departments concerned with health, voluntary agencies, teaching and research institutions all have important roles. Provincial governments bear the main responsibility, with the municipalities often exercising considerable authority over health matters delegated to them by provincial legislation.

The Federal Government has jurisdiction over a number of health matters of a national character and provides financial and technical assistance to provincial health and hospital services, particularly through the National Health Grants Program and the nation-wide hospital insurance scheme. All levels of government are aided and supported by a network of voluntary agencies working in different health fields.

A noteworthy event in 1964 was the publication of the first volume of the Report of the Royal Commission on Health Services, embodying its major analyses and recommendations. The Royal Commission, under the chairmanship of Mr. Justice E. M. Hall, was appointed in 1961 by the Federal



*Frobisher Bay General Hospital (administrative and medical centre for the eastern portion of the Canadian Arctic) opened in November 1964. The hospital has 20 beds for adults and eight for children. Construction cost \$1,500,000.*

Government to inquire into existing health resources and the future need for health services for the people of Canada and to recommend measures which would ensure that the best possible health care is available to all Canadians.

In its report the Commission defined the nation's health goal in the form of a "Health Charter for Canadians", declaring the fundamental objective to be the achievement of the highest possible health standards through a comprehensive health services program (preventive, diagnostic, curative and rehabilitative), available to all Canadians regardless of age, condition, place of residence or ability to pay. Prepayment arrangements for financing the program introduced in stages, should apply to the whole range of personal health care services including medical care, provision of prescribed drugs, dental and optical services for children and public assistance recipients, prosthetic services and home care programs.

The report recommended that, subject to certain terms and conditions related to minimum national standards, both the organization and order of implementation of each service and the method of prepaid financing within a province should rest with the provincial governments. It recommended that the Federal Government's share of the costs should consist of a contributory grant of 50 p.c. of the actual costs, an administrative grant of 50 p.c. of the administrative costs of the program not to exceed five p.c. of the actual total costs, and a fiscal need grant to assist financially-weaker provinces to provide health care services at standards comparable to those of the rest of Canada.

The Commission also stressed the high priority of recommendations concerning mental illness, handicapped children, and dental disease. Immediate action was recommended to designate the costs of active or convalescent mental hospital care and hospital care for tuberculosis patients as sharable costs under the Hospital Insurance and Diagnostic Services Act. It was stated that special attention should be given to the provision of services for retarded and crippled children, a new prepaid dental care program for children up to the age of 18, and the fluoridation of community water supplies.

To meet the need for greatly expanded numbers of health personnel, particularly doctors, dentists and nurses, the Commission recommended a "crash program" for education and training. Proposed federal aid to the

program would include such measures as payment of half the capital cost of enlargement of existing health training facilities and establishment of new medical and dental colleges and nursing schools; a health professions' university grant of 50 cents per capita for distribution to universities with facilities for education in the health professions; and grants and bursaries to students undertaking training in specified specialties in short supply.

### Prepaid Medical Care

Although the traditional way of paying for personal health care services in Canada has been by direct payment from the patient to the provider of service, many persons now prepay these costs through voluntary enrolment in insurance plans. About 9,700,000 Canadians, or 52 p.c. of the population, had some protection against the costs of physicians' services at the end of 1962.

Many families, however, cannot afford to finance these health services or are not eligible for voluntary insurance. For several years the provinces of Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia have financed the cost of providing certain personal health care services for about 450,000 persons in need and receiving public assistance. The principal service covered is physicians' care. In certain provinces the range of benefits is more comprehensive and includes prescribed drugs, appliances, and emergency transportation, and the services of dentists, private duty nurses, optometrists, chiropodists and other health personnel.

In addition to their public assistance programs, the provinces of Saskatchewan and Alberta operate province-wide prepaid medical care programs available to all residents for whom a premium has been paid. The Saskatchewan program is compulsory for all eligible residents with regard to payment of premiums. The plan is administered by a public commission which collects the revenues (from premiums, corporation and personal income taxes, a portion of the retail sales tax and general provincial funds), and makes disbursements to participating physicians. The majority of doctors practise

*Posters and pamphlets constantly urge young Canadians to guard their dental health. In all provinces clinical care is provided for children in remote rural areas. Water fluoridation projects operate in eight provinces and in the North.*



on a fee-for-service basis and may, if they wish, receive payments channeled through voluntary agencies or directly from patients.

The Alberta program, which is intended to guarantee availability of coverage, is voluntary. The government involvement is confined to setting out maximum levels of premiums and minimum levels of benefits for approved voluntary prepayment plans, and providing assistance in the payment of premiums to families who qualify on an income test as unable to afford the full cost of premiums.

In Newfoundland, about one half of the population receive physician's services at home or in hospital under the provincially-administered Cottage Hospital Medical Care Plan which is financed in part on a premium basis. Medical indigents not under the plan may also receive care at provincial expense. In addition, all Newfoundland children under the age of 16 years are entitled to free medical and surgical care in hospitals.

## Hospital Insurance

The federal-provincial hospital insurance program, established in all provinces and both territories, now covers 99.1 p.c. of the insurable population of Canada. The system of federal grants-in-aid to the provinces to meet about 50 p.c. of the cost of specified hospital services is set out under the federal Hospital Insurance and Diagnostic Services Act of 1957.

In order to participate in the program each province is required to make standard or public ward hospital care and other specified in-patient benefits, including laboratory and radiological diagnostic services, available to all of its residents under uniform terms and conditions. The provinces may also provide insured out-patient hospital services on an optional basis, with the pattern varying considerably from province to province.

The methods of financing and administering the provincial plans, as well as certain details concerning eligibility for benefits, rest with the provinces. Federal legislation applies only to services provided by approved active treatment, chronic and convalescent institutions and related facilities, and specifically excludes mental hospitals, tuberculosis sanatoria and custodial care institutions. Federal payments to the provinces under the program from July



*Dentists have busy practices because of the rapidly-expanding population. In 1963, 42 dentists immigrated into Canada.*

*A junior ballet class, organized by the Recreation Department of the township of North York, receives instructions before a performance. Ballet classes have become very popular in Canada in the last two decades.*



1, 1958 to March 31, 1964 totalled over \$1.4 billion and for the fiscal year 1963-64 alone, amounted to \$392.2 million.

## Mental Illness and Mental Retardation

The wide field of mental illness constitutes the largest health problem in Canada. In 1962 the total operating costs of mental hospitals amounted to nearly \$142,000,000. In addition, the costs of treatment provided by mental health clinics and after-care centres, day-and-night hospitals, training schools and workshops for the mentally retarded, alcoholism clinics, together with the amount spent on research and training of personnel, add many more millions to the total cost.

In 1964, greater emphasis was placed on the establishment of local and community psychiatric services, coverage for psychiatric treatment in medical care insurance plans, and the training of provincial mental health personnel. The findings of recent comprehensive reports of the Canadian Mental Health Association, and the Canadian Association for Retarded Children, have had a beneficial influence on the planning and development of new services for the mentally ill and the mentally retarded.

The first community psychiatric hospital at Yorkton, Saskatchewan, situated adjacent to and operated in conjunction with the community general hospital was opened in 1964 with 148 beds for in-patient, out-patient and after-care program. In Ontario new community facilities have been established under the Community Psychiatric Hospitals Act in Ottawa, Windsor, and northern Ontario. More community services are developing for patients who can be treated at home to reduce, or avoid, the need of in-patient care. New psychiatric units continue to be opened within general hospitals to treat increasing numbers of patients.

An outstanding event in 1964 was the holding of the first federal-provincial conference on mental retardation. As part of the preparatory work of the conference, the official health, education and welfare departments in each province completed joint surveys of their resources and needs as a means toward development of co-ordinated services for the mentally retarded.



*All units of the Radiation Protection Division, the youngest Division of the Department of National Health and Welfare, are now located in a new building in Ottawa. There is a staff of some 75 persons—doctors, scientists, technicians and clerks. The functions of the Division are essentially advisory.*

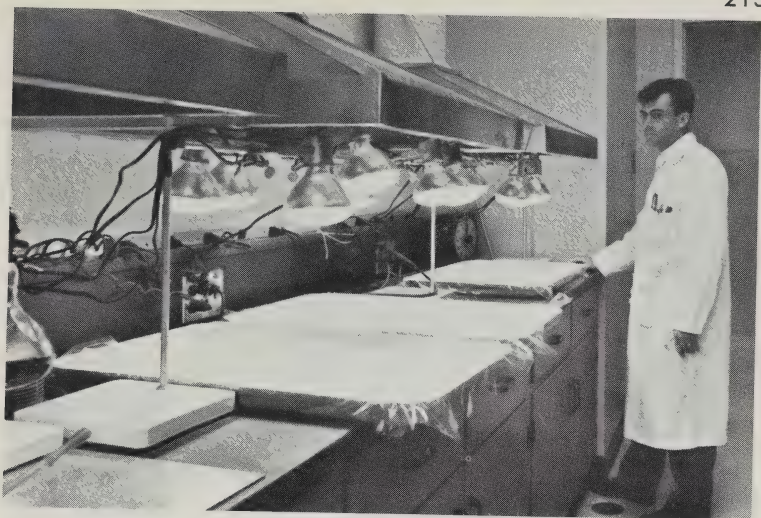
Related studies have also been prepared by federal departments and interested voluntary agencies. Further impetus to broaden research in all aspects of mental retardation has been provided by the centennial demonstration projects sponsored in each province by the Canadian Association for Retarded Children.

## **Services for the Chronically Ill and Disabled**

Because of the special needs of the aged and chronically ill and the complexity of services required, the provincial hospital services' plans, the health and welfare departments, and numerous voluntary agencies have been actively studying the problems and charting new directions. Priority is being given to developing an adequate range of community facilities and services and their rational use, and to improving treatment standards in hospitals, nursing homes and homes for the aged. In their submissions to the Special Committee of the Senate on Aging, many provincial governments and other agencies have also stressed adequate planning and co-ordination of community services for the chronically ill, research in geriatrics and long-term care, and better training of all personnel working in this field.

A great variety of hospital and other institutional care and community services are required by the chronically ill. General and special hospitals and separate rehabilitation centres in each province provide restorative services and special rehabilitation to severely disabled children and adults. Out-patient clinics are established in the teaching hospitals and centres for such chronic diseases as arthritis and rheumatism, glaucoma, low vision, cancer, diabetes, heart disease, and mental illness.

Of particular importance to children are the clinics for orthopaedic conditions, speech and hearing, cleft palate, cerebral palsy, cystic fibrosis, epilepsy, mental retardation, and others. Complementary health services to patients



*Infra-red lamps are used to evaporate samples of water which will be tested for radioactive fallout components. This is part of the program conducted by the Radiation Protection Division of the Department of National Health and Welfare.*

in their own homes, such as organized home care, visiting home nursing and physiotherapy and homemakers' services are being expanded in many communities. Voluntary agencies have been prominent in initiating many of these patient services as well as health education and medical research activities. In addition, the federal-provincial vocational rehabilitation program administered by the provinces assists disabled persons to work productively.

Arising from the concern for children with congenital anomalies, three prosthetic research and training units have been set up through federal grants in rehabilitation centres in Montreal, Toronto and Winnipeg. The development of uniform provincial registries of the handicapped has been stimulated by the report of the Expert Committee on the Occurrence of Congenital Anomalies of the Dominion Council of Health. Recent surveys of services for handicapped children in Ontario, Alberta, and Manitoba have dealt with such registries and other services. Easier access to public buildings by the physically-handicapped should result from the adoption of building standards for the handicapped prepared by the National Research Council as a supplement to the National Building Code.

## **Public Health Services**

To ensure the protection and care of community health, organized provincial services deal with environmental sanitation, communicable disease control, child and maternal health, health education, vital statistics, public health laboratories, occupational health, dental public health, and nutrition services. Day-to-day surveillance is maintained by personnel specially trained in such fields as sanitary engineering, industrial hygiene and public health nursing.



*Canada's smoking and health program, concerned with the relationship between cigarettes and certain diseases, is especially directed to young people.*

In recent years, new environmental problems have emerged in the form of air pollution, water pollution and radiation hazards which require extensive public health research and safeguards through the specialized divisions of the Department of National Health and Welfare concerned with occupational health and radiation protection. The Occupational Health Division continues its investigations into the effects of noise, air pollution, pesticides, industrial hazards, mine dust, stresses, and fatigue. The year 1964 marked the opening of a new federal laboratory designed specifically for the program of the Radiation Protection Division of the Department of National Health and Welfare in radiation research and surveillance.

## Smoking and Health

Following the first Canadian Conference on Smoking and Health called by the Minister of National Health and Welfare in November 1963, two national technical advisory committees were appointed early in 1964—one on health education and the other on research. A Canadian reference book on smoking and health, which consolidates information from the main reports and studies on this subject, has been published for the use of professional health workers.

## Welfare

Welfare programs in Canada are mainly conducted by provincial and municipal governments and by voluntary agencies. The role of the Federal Government is primarily that of providing consultant and financial assistance,

although it provides welfare services to those for whom it has a statutory responsibility—Indians, Eskimos, present and past members of the Armed Services, etc.

The Federal Government introduced in Parliament in November 1964, a bill to authorize the establishment of the Canada Pension Plan under which earnings-related pensions would be payable to contributors at retirement, or disablement, and to their survivors. The plan will cover compulsorily the majority of employees earning more than \$600 a year and the majority of self-employed persons earning more than \$800 a year. The bill received Royal Assent on April 3, 1965.

### **Family Allowances**

Family allowances are paid, normally to the mother, for children under 16 years of age born in Canada or who have been resident in Canada for one year. Allowances are paid by the Federal Government from general revenues, involve no means test and are not considered income for tax purposes. They are paid at the monthly rate of \$6 for children under 10 years and \$8 for children 10 to 15 years of age.

Family assistance is paid at the same rates for each child in Canada under 16 years of age supported by an immigrant who has permanent residence in Canada, or by a Canadian returning to Canada to reside permanently. It is paid for a period of one year, until the child is eligible for family allowance.

### **Youth Allowances**

In 1964 a program of youth allowances was introduced under which \$10 a month is payable for children age 16 and 17 as an incentive to continue their training and education. The allowance is payable while the youth remains in school. It is also payable for children who because of physical or mental impairment are unable to attend school. For these latter children the youth allowances fill the gap between the discontinuance of family allowances and eligibility for disability allowances.

As Quebec has a similar program, arrangements have been made whereby a financial equivalent of the amounts otherwise payable in Quebec will be paid to the government of that province.

### **Old Age Security**

A pension of \$75 a month is paid by the Federal Government to all persons aged 70 or over who have been resident in Canada at least ten years. It is financed through a 3-p.c. sales tax, a 3-p.c. tax on net corporation income and, subject to a maximum limit of \$120 a year, a 4-p.c. tax on personal net taxable income. Payment of the pension outside the country is made for six months in any case, and indefinitely for a person who has had 25 years' residence since age 21. (Beginning in 1966 the pension will be paid to persons of 69; in 1967 to those of 68, etc. By 1970 all eligible persons of 65 will receive the pension.)

Recipients of old age security who are in need may receive supplementary aid under provincial general assistance programs.

### **Unemployment Assistance**

In accordance with the Unemployment Assistance Act, 1956, as amended, the Federal Government partially reimburses provinces and territories for

unemployment assistance expenditures made to eligible needy persons and their dependants who are unemployed. The Federal Government also shares in certain other additional welfare assistance programs.

### **Old Age Assistance, Disabled and Blind Persons Allowances**

Assistance of up to \$75 a month is paid under the Old Age Assistance Act to needy persons aged 65 to 69 years; under the Disabled Persons Act to those 18 years of age or over who are totally and permanently disabled; and under the Blind Persons Act to blind persons aged 18 or over. In each case there is a residence requirement of ten years, and the allowance is subject to a means test.

For old age assistance and disability allowances, total annual income may not exceed \$1,260 for a single person, \$2,220 for a married couple and \$2,580 for a married couple, one of whom is blind. For blindness allowances it may not exceed \$1,500 for a single blind person, \$1,980 for an unmarried blind person caring for a dependent child, \$2,580 for a married couple when one spouse is blind and \$2,700 for a married couple when both are blind.

Programs are administered by the provinces; the Federal Government reimburses the provinces for one half the payments for old age assistance and disability allowances and for three quarters of those for blindness allowances.

Supplementary payments are available under the provincial general assistance legislation for those recipients who are in need. The amount is determined largely through an individual assessment of need which takes into consideration the recipient's requirements and resources.

### **Mothers' Allowances**

Allowances to certain needy mothers with dependent children are provided by all provinces, in some through Mothers' Allowances Acts; in others through general social assistance legislation. Assistance is granted to widows, mothers with husbands in mental hospitals, mothers who are deserted and mothers whose husbands are disabled. Some provinces provide also for mothers with husbands in penal institutions and for divorced, separated and unmarried



*A patient who has arrived in Regina by air ambulance is transferred to ground ambulance.*

mothers. To be eligible, an applicant must be caring for one or more children, must meet specified conditions of need and residence and, in some provinces, of character or competence and, in one province, of citizenship.

## General Assistance

Aid is provided in all provinces to persons in need who cannot qualify under programs designed for specific groups. Assistance is normally determined by the local authority and is given on the basis of a means or needs test. In general the municipalities administer the program, with provincial governments assuming responsibility in unorganized territory. In four provinces, however, aid to certain groups of people requiring long-term assistance is administered by the province.

All provinces provide for substantial reimbursement to municipalities for relief expenditures except in Newfoundland where the provincial government administers all forms of general assistance. Under the terms of the Unemployment Assistance Act, the Federal Government shares with the provinces and their municipalities 50 p.c. of the cost of assistance payments to unemployed persons.

Immigrants in their first year in Canada may receive aid through the local authority under an agreement made with all provinces (except Quebec and Manitoba) whereby costs are shared by the federal and provincial governments, or they may be referred directly to the local office of the Department of Citizenship and Immigration.



*Young people are encouraged to practise healthful sports. Here, four children try lacrosse—an ancient game in America. It received its name from early French settlers who likened Indian players' "racquets" to the bishop's crozier (lacrosse).*

## **Fitness and Recreation**

All provinces and the majority of the larger municipalities operate active fitness and recreation programs, both through the organization of community services and through the school systems.

The Federal Fitness and Amateur Sport Act of 1961 provides federal aid and stimulus to fitness and recreation activity through direct grants to national organizations or for purposes of national interest, through grants to the provinces and through the provision of direct services. The Department of National Health and Welfare administers the federal program, with the aid of a National Advisory Council and a federal-provincial committee of officials. Grants are made to encourage amateur sport and to assist Canadian participation in international competition. Training of staff for physical education and recreation is emphasized through grants for fellowships and other forms of aid for graduate and undergraduate students and training courses for voluntary leaders and coaches.

## **International Welfare**

Canada, through the Department of National Health and Welfare, plays an active role in a number of international agencies concerned with social welfare and social development. Canada is a member of the Executive Board of the United Nations Children's Fund (UNICEF); the Deputy Minister of Welfare served as Chairman of the Program Committee.

The Department assisted the work of the International Labour Organization, with special regard to social security matters, and the International Social Security Association. Also, on behalf of the External Aid Office, the Department arranges programs in social welfare and related fields for trainees coming to Canada under the auspices of the United Nations and bilateral technical assistance programs, and assists with the recruitment of Canadian advisers to developing countries. Among Canadian voluntary agencies there is also widespread interest and activity in fostering social welfare internationally.

## **Other Welfare Services**

Provincial and municipal government departments, in addition to administering income maintenance programs, offer a number of other services to the community. There are wide differences in the degree to which services have been developed. These may include child welfare and old age services, public housing, post-sanatorium rehabilitation programs, nursery and day care programs, recreation, family and juvenile courts and other correctional services, and the maintenance, supervision and licensing of welfare institutions.

An important role in meeting the needs of families is also played by voluntary family service agencies, of which there are some 100 in the principal centres throughout the country. These agencies, which sometimes combine certain child welfare services with their family programs, were among the pioneer welfare agencies of Canada. Their emphasis today is largely on casework and counselling, though groupwork techniques are now being introduced.

In addition to family agencies, more specialized organizations are available in some centres to meet particular needs. Homemaker services, recreation, day care centres, services for special groups such as the aged, immigrants,

*Indoor pools provide healthful exercise in the winter months. Many of the new apartment buildings include large pools for tenants' recreational pursuits.*



youth groups and former prisoners are among those provided by voluntary agencies, with co-ordination of services in the larger centres a function of the local welfare council. Ethnic and religious groups also provide a variety of services to special groups.

Voluntary agencies are financed by public contributions, usually through a united fund or community chest, and some may also be assisted by grants from municipal, provincial or federal governments.

**Child Welfare and Protection.** Services for children, especially those suffering from parental neglect or deprived of normal home life, were among Canada's earliest welfare programs. Child welfare agencies in most Canadian communities increasingly emphasize casework services designed to strengthen the family's capacity to care for its children. Where placement is essential, children may be made wards of child welfare agencies either temporarily pending the improvement of home conditions, or permanently where a return to the home is not envisaged. Action to transfer the guardianship of children from a parent to an agency is taken only on court authority.

The unmarried mother is assisted in social and legal problems and when the decision is to place the child, adoption is the plan normally made. Approximately 13,500 adoptions are completed in Canada annually.

Children in the care of agencies and not placed for adoption are usually cared for in foster homes, though institutions are still used extensively. Specialized institutions care for children having emotional disturbances or problems which cannot be met adequately in the normal foster home. Rapid expansion is occurring in community services for retarded children and many centres have classes and schools for them.

Child welfare services are provided under provincial legislation and all provinces have some central authority. Except in Quebec, the program may be administered by the provincial authority itself or may be delegated to local children's aid societies, which are voluntary agencies with local boards of directors supervised and assisted financially by the province.

Services are operated provincially in Saskatchewan, Prince Edward Island, Newfoundland, and to a large extent in Alberta, where there is also some delegation of authority to the municipalities. In Ontario and New Brunswick, services are administered by a network of children's aid societies covering the entire province; in British Columbia, Manitoba and Nova Scotia, children's aid societies serve some areas with the province providing direct services elsewhere. In Quebec, child welfare services are provided by agencies and institutions under private, and largely religious, auspices with provincial supervision and grants toward child maintenance being administered by the Department of Family and Social Welfare.

**Services for the Aged.** A variety of welfare services is offered under public and voluntary auspices to older persons in many communities. These include informational, counselling and referral services, friendly visiting, housing registries and homemaker services. Voluntary services are provided in several cities by family agencies and in a few by agencies organized specially to serve older persons. A large number of clubs and some centres have been established to provide recreational and social activities. Some centres provide casework, counselling and employment services.

In recent years a number of specially designed low-rental housing projects have been built for older persons, particularly in Ontario and the four western provinces. Generally these have been financed by a combination of federal low-interest loans, provincial grants and municipal and voluntary contributions. Welfare institutions are maintained to care for many older people who do not require hospital care. These are operated mainly by municipal governments or voluntary and religious organizations, generally with some form of public aid.

An effort is made in some provinces to place well, older persons in small boarding homes. The aged who are chronically ill are cared for in chronic and convalescent hospitals, private or public nursing homes and in homes for the aged and infirm.

**Correctional Services.** The responsibility for Canada's adult correctional services is shared by the federal and provincial governments. Institutions for prisoners receiving sentences of two years or more are a federal responsibility; institutions for short-term prisoners are under provincial jurisdiction.

Voluntary welfare agencies do a great deal of the parole supervision and provide after-care service. The juvenile services are under provincial jurisdiction with institutional care and preventive services provided by voluntary welfare agencies in some provinces.

## Veterans Affairs

Under the legislation known collectively as the Veterans Charter, Canada continues to provide for her veterans who meet service requirements, their dependants and the widows and orphans of war dead, benefits designed to alleviate the effects of war on individuals and to ensure that no one who placed his life at the disposal of his country should suffer hardship in his evening of life.

The administration of this legislation is the sole responsibility of the Department of Veterans Affairs, the Canadian Pension Commission and the War Veterans Allowance Board. Highlights of their activities during 1964 include the following:

Amendments providing increased benefits under two major pieces of legislation—the Pension Act and the War Veterans Allowance Act—were announced on November 10, and made effective from September 1, 1964. Disability and dependants' pensions were increased by approximately 10 per cent and higher rates and income ceilings were provided for recipients under the War Veterans Allowance Act.

The maximum disability pension for a single veteran is now \$200 monthly instead of \$180; for a married pensioner, \$264, rather than \$240. Proportionate increases were also provided for dependent children.



*Some fifty senior citizens' homes have been constructed by the Alberta government. This living room at Hillcrest Home, Barrhead, is a comfortable meeting place for residents.*

Allowances under the War Veterans Allowance Act have been increased to \$94 for single recipients and to \$161 for those who are married.

The annual income ceilings under this Act have been raised to \$1,596 for a single recipient (formerly \$1,296), and to \$2,664 for a married recipient (formerly \$2,088). The higher income ceilings now incorporate the exempt income formerly allowed from Old Age Security pensions—\$240 for one person or \$480 for a married couple.

Other principal veterans benefits are treatment, land settlement, home construction and veterans' insurance. The statistical highlights of these are shown, as at September 30, 1964:

Benefits	Veterans and Dependants	Liability or Cost
	No.	\$
Disability and Dependants Pensions.....	178,555	166,650,402
War Veterans Allowances.....	84,047	84,867,909
Patient days (Sept. 30, 1963 to Sept. 30, 1964).....	2,500,486	65,667,282 <sup>1</sup>
Assisted under Veterans' Land Act (cumulative).....	95,877	605,934,411
Trainees, Children of War Dead (cumulative).....	3,475	4,046,099
Unclaimed Re-establishment Credit.....	61,799	8,971,695
Veterans Insurance.....	29,240	92,644,679
Returned Soldiers' Insurance.....	7,215	15,410,361

<sup>1</sup>Before recoveries.

In co-operation with the government of the Province of Alberta, the Department is replacing accommodation designed for the long-term and domiciliary care of veterans in Edmonton.

A Departmental domiciliary-care institution in Lancaster, N.B., has been turned over to the New Brunswick Workmen's Compensation Board for use as a rehabilitation centre, in which the domiciliary-care requirements of veterans will continue to be met.

The replacement of the Veterans Home in Saskatoon with a modern 75-bed structure was completed early in 1965, and planning is under way for the construction of a new 672-bed chronic-disease hospital to replace the outmoded Ste. Anne's Hospital at Ste. Anne de Bellevue, Quebec.

Between July 1963, when low-cost life insurance to pay the remaining contract debt was made available to veterans settled under the Veterans' Land Act, and November 30, 1964, over 5,000 veterans obtained coverage with a total value of \$35 million. To date, nearly \$100,000 has been paid in benefits on behalf of the survivors of 15 deceased insured borrowers under the Act.

Commemorating Canada's 111,548 dead of both World Wars, and marking Canada's participation in these conflicts, ceremonies were held June, 1964 under the auspices of the Minister of Veterans Affairs at Bény-sur-Mer Canadian War Cemetery, near the invasion beaches of Normandy, and the Vimy Memorial, near Arras, France; at the Menin Gate Memorial, Ypres, Belgium; and at Groesbeek Canadian War Cemetery, near Nijmegen, Holland. Government representatives also attended other Canadian ceremonies on the Normandy Beaches and at Dieppe, and similar events held by Britain, France and the United States.

In conjunction with the Department of National Defence, the Department provided souvenirs and other war memorabilia for Canada's salon in the French memorial museum opened last August at Toulon, on the south coast of France. The museum commemorates the successful landings made there twenty years ago by combined Canadian, British, French and American forces.

Honouring Canada's war dead of all conflicts in which Canada has participated, Her Majesty the Queen accompanied by Prince Philip, Duke of Edinburgh, laid a wreath on Canada's 1914-1918 National War Memorial in Ottawa in a Remembrance service, attended by an estimated 20,000 persons. The ceremony took place on October 12 during the 1964 Royal Visit.

Nine awards of merit were made during 1964 for "Fields of Sacrifice", the 40-minute coloured motion picture prepared for the Department by the National Film Board, to show how Canada's war dead are remembered and honoured in death. These were: the Certificate of Merit as the best film in the General Information Class, 16th Annual Presentation of Canadian Film Awards, Toronto; second prize at the Victoria International Film Festival, Victoria, B.C.; the Chris Certificate Award for the best information-education category film at the 12th Annual Columbus Film Festival, Columbus, Ohio, U.S.A.; and six awards made by the Canadian Society of Film Makers, Montreal, to individuals who worked on the film.



*Two new universities, Brock and Trent, opened their doors in Ontario in 1964, and additions were made to many existing institutions. Above is the new centre for engineering at Carleton University, Ottawa. Approximately 158,000 students were enrolled in full-time courses in Canadian universities and colleges, 1963-64.*

## Education

# Pattern Undergoes Transformation

In Canada, a quiet revolution is taking place in education, and no level of education, or type of institution, is escaping the pressure for change. As a result, the whole pattern of education is undergoing a transformation, with the ten provincial, and other, systems developing independently and at different rates. Increases are noted in numbers of students enrolled, teachers employed, and in expenditures.

At Confederation, it was agreed that responsibility for the school system would be vested in the legislature of each province. But the roots go back to pioneer days when education was enmeshed in the social and economic structure.

Educational change in Canada is usually peculiar to each province although there is nothing to prevent two or more provinces from co-operating, or to prevent one province from adopting or adapting ideas from another.

## *Provincial Systems Differ*

There are more similarities than differences in provincial systems; yet the differences do raise problems. Though changes introduced in any one province normally affect only that particular province, they often affect other areas indirectly.



*In cosmopolitan areas, teachers have pupils from many ethnic groups. In the 1963-64 school year some 4,787,000 children were enrolled in full-time courses in elementary and secondary schools. Parents receive Family Allowance payments while their children attend school.*

Each province has a Minister of Education who is in charge of a Department, the actual administration of which is conducted by a Deputy Minister. Responsibility for the several areas is divided among directors in charge of elementary, secondary, vocational-technical and adult education, teacher education, curriculum, textbooks, school administration, and organization, audio-visual aids, health and physical education, etc. A registrar and accountant maintain records of numbers and accomplishment. In addition, there are chief and other inspectors and supervisors who act as superintendents of elementary and secondary schools.

Usually other officers are appointed whose responsibilities and titles depend on the special needs of the province. Many provinces have, separate from the immediate organization of the Department of Education, advisory councils or advisory boards for academic and vocational education.

The recent high incidence of change dates from the surge of children entering school following increased war and post-war births. These pupils are now swelling the ranks of university entrants. Indeed, university students are expected to double in numbers during the next decade.

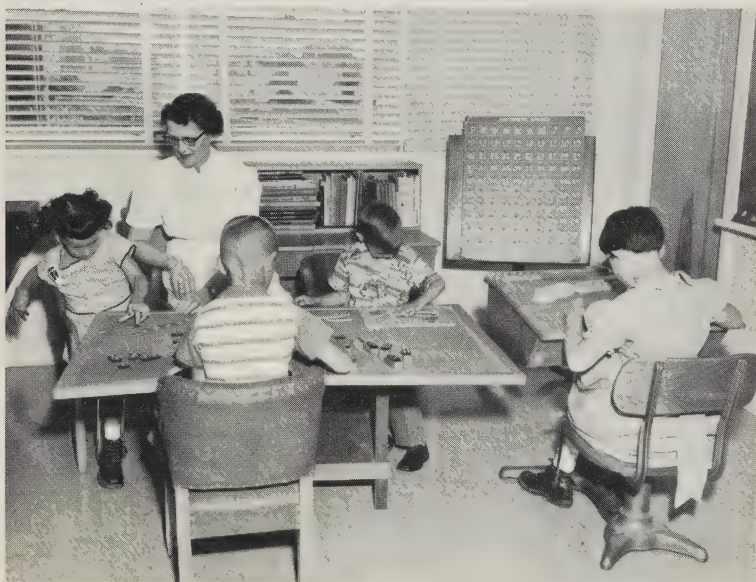
Increased numbers in institutions of higher education reflect an increasing trend for youth to stay longer in school, or to enter university. A third factor is the new emphasis on vocational-technical schooling. Other factors include increased years of coverage for family allowance, changes in curricula and greater variety in the organization of secondary schools.

The impact of sputnik, was followed by an intensified program in space research—and an awareness of the need for educational changes. In addition, there is a growing appreciation of the fact that the trend to automation is affecting job openings and requirements, demands for engineers, scientists, and technicians as well as other professionals. Increased competition by universities, government and industry for university graduates at all levels has increased pressure on educational institutions to produce more and better graduates.

Another revolutionary change is to be found in the unprecedented growth in knowledge, particularly in the field of science. Concurrently, newer media of instruction such as "teaching machines", programmed texts, overhead projectors, closed circuit and educational television are more readily available. To provide for individual differences and ensure increased efficiency, schools have introduced team teaching, language laboratories, television programs and other techniques. In some schools, new mathematics, new physics, and other subject changes in content and approach are being introduced.

### *Higher Enrolments in Universities*

Although burgeoning enrolments and the establishment of new institutions are highlights of the higher education situation today, they are only a part of movements which are changing the whole educational picture. Enrolment of full-time students in 1963-64 rose to 158,240, which was 11.9 per cent above the previous year's figure. In addition, some 45,000 part-time students and 7,500 correspondence students were enrolled in Canadian universities.



*Victims of cerebral palsy are given training and medical care.*



*Eskimo children study in a Federal day school, Resolute Bay, N.W.T. More than a thousand Eskimos have taken specialized training courses. They have become mechanics, steam-fitters, carpenters, cat operators, nursing aides, clerks and miners. They have some 20 co-operatives in the North with an estimated revenue in 1965 of \$1,250,000.*

Forecasts of the Canadian Universities Foundation indicate that the 1962-63 enrolment will be doubled by 1969-70. The C.U.F. forecasts further indicate that if the ratio of students to teaching and research staff remains constant, the professorial staff will increase from 2,550 full-time and 1,800 part-time members in 1962-63 to around 18,000 in 1970-71.

In 1962-63 the universities graduated 350 students with doctorates and 3,150 with master's degrees or licences. Prediction of ability to recruit adequate staff will be uncertain since many students are doing graduate work abroad and will return to Canada. In 1962-63 UNESCO reported 8,000 such students in higher educational institutions abroad and some 8,000 non-Canadian students studying in Canada.

Canada has recruited increasing numbers of teaching personnel from Europe, Asia, and Africa but, in turn, has lost many scientists to space research programs, and teachers, to other countries.

The demand for university graduates is likely to increase, although it will vary from discipline to discipline. Mitchener, using the C.U.F. forecasts, has indicated the numbers likely to be graduated in the various disciplines to 1976-77, with the numbers of first degrees rising from 25,221 in 1962-63 to 95,100 in 1976-77. The numbers of second and third degrees will probably increase even more, proportionately, and, in time, might create a surplus in some disciplines unless there is some assessment of demand and control of supply.

### *New and Expanded Facilities*

New institutions are being established and present holdings are being expanded in order to meet the need for new student places. More provincial moneys must be found in addition to federal grants and public subscriptions to building fund drives.

In British Columbia, following the Macdonald report, there is provision for three universities, British Columbia, Victoria and Simon Fraser (the latter new, and the second, now independent) which, with the development of junior colleges, is expected to meet the needs for higher education for some time.

In New Brunswick, following the Royal Commission report, the government is ensuring that a concerted system of universities provides for needs at both the undergraduate and graduate levels. The problem in New Brunswick was, in many ways, the opposite to that in British Columbia. In the former, the need was to co-ordinate the work of six existing universities and colleges whereas, in British Columbia, where by law there was one provincial university, the proposal was for the establishment of several new junior colleges and universities to accommodate prospective candidates while still ensuring quality education.

In Ontario, following reports of the Committee of the Presidents of the Universities of Ontario, the government decided to establish a Department of University Affairs, the first in Canada, with the Minister of Education its Minister. A deputy, and supporting officers, were made responsible for providing financial aid for university capital expansion through a Crown corporation and for providing direction and liaison for the universities. New universities include Brock at St. Catharines, and Trent at Peterborough. The Federated Colleges of the Department of Agriculture of Ontario were re-organized as the University of Guelph. Scarborough College is being developed by the University of Toronto, outside Toronto, and a second college will follow. Several universities are increasing the number of faculties, adding colleges of education, medical, dental, and nursing schools.

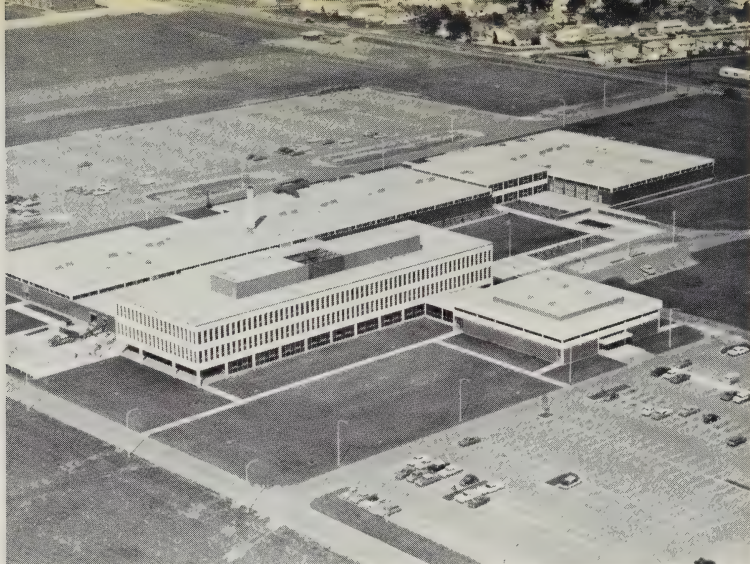
The second volume of the Parent Report, or Royal Commission on Education in Quebec, recommended that higher education encompass all studies beyond the thirteenth year, a diploma being earned at the end of six years of elementary, five years of secondary, and two years at the new "institutes". This is now being studied for implementation by the legislature.

Interesting developments or expansions are going on in the other provinces. In the West the trend is to introduce new legislation to provide for the establishment of more than one university with degree-granting powers, and for the establishment of junior colleges.

Other matters of concern to university administrators include the problem of selection, or entrance, requirements. The Committee of Ministers of Education received a submission supported by several interested Canadian bodies that a Canadian Council on Admission to College and University be

*Students receive practical instruction in this farm vehicle mechanics class at the Saskatchewan Technical Institute, Saskatoon.*





*Manitoba provides educational facilities geared to the needs of its economy. Shown here is the new Manitoba Institute of Technology.*

established. A special committee was set up to study the matter and to report. A related problem concerns the twelve months' year for regular classes in the universities. Simon Fraser University in B.C. is to introduce a "trimester" system, which will provide an experimental situation to test student and professor response. Waterloo Engineering College already operates on a two-shift work-study program covering the full year and expects to expand this type of program into other suitable areas. Increased enrolments may involve year-round operation, graduate faculty enlargements and the establishment of new institutions.

The Canada Student Loans, operated by the banks but guaranteed by the Federal Government, provide up to \$1,000 a year for from one to five years to needy students. This solves financial problems for many students, but it has implications for university growth as well.

The Canadian Universities Foundation appointed Vincent Bladen from the University of Toronto to chair a commission to study the financing of higher education in Canada.

### *Greater Emphasis on Vocational Training*

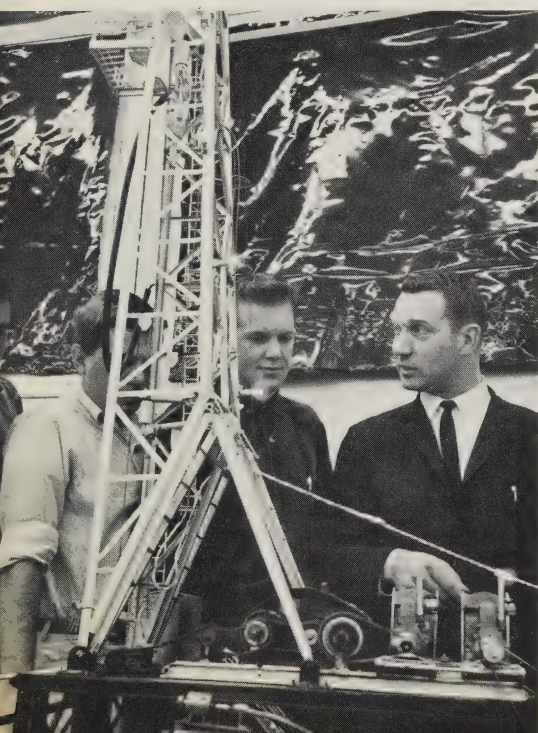
Vocational and technical education have recently assumed a new importance in this country. A growing awareness of youth unemployment and underemployment, shortages of technicians, skilled workers and professional personnel, the retraining and continuing educational needs of workers replaced by technical advances, as well as increased demands for education of all types and at all levels, reflects the situation today. At the same time, since the number of entrants into the work force is increasing year by year as never before, many new jobs must be created to absorb the increase. Basic movements behind the present activity to meet the needs in the field of work are, as in many countries, a stepped-up movement towards urbanization with its introduction of new problems and, concomitantly, the development of secondary industry, with development in new design, packaging, transportation,

salesmanship, etc. At the same time, the increased use of automation, including the computer, has raised the possibility of mass unemployment, a surplus of leisure and new demands on the schools.

As a minimum, it is expected that unskilled labouring jobs will be reduced in number, year by year, blue collar jobs will be reduced in relative number and those that remain will require more skills. White collar jobs will drop less in number but increase in complexity; professional positions will increase in both numbers and demand for competency; and service jobs will increase at least for some time.

Essentially, this indicates a changed role for education. Drop-outs, most of whom previously found jobs at the unskilled or semi-skilled level, bid fair to become even more of a problem. Continuing education is providing upgrading, retraining, and more vocational courses than ever before, but must be stepped up to meet the increasing need.

Through the Technical and Vocational Training Branch, Department of Labour, the Federal Government operates programs under agreement with the provinces covering the following: vocational courses in secondary schools; technical institutes; adult trade and other occupational training and retraining, including apprenticeship; management education and supervision; technical analysis and services; and administration. Money is provided to assist with capital projects, equipment, current expenditure on vocational-technical programs and teacher training. Technical assistance is also provided for supervisory and managerial courses and other activities considered to come under the agreements and aimed towards providing a more highly-skilled



*Petroleum technician students study a model of an oil rig at the Southern Alberta Institute of Technology.*



*The University of Manitoba, a leading centre of liberal arts, is situated on the outskirts of Winnipeg.*

workforce. Activities of the branch are administrative, supervisory and consultative, with emphasis on co-ordinating the training activities provided in the ten provinces.

From April 1, 1961 to March 31, 1964, \$560 million was provided for vocational education, of which \$341 million was contributed by the Federal Government. This provided for fourteen new technical institutes and additions to twenty-two others, an additional fifty-two trade schools to supplement the seventy-eight which were improved, and brought the number of vocational high schools to 305. Altogether this provided for 153,371 student places, with the majority of students enrolled in two and three year courses. By October 31, 1964, 616 projects were approved at a value of \$654.6 million.

### *Increased Interest in Adult Education*

Increased interest in further education is evident as each annual survey in the field is conducted. In 1962-63 there were 1,077,185 persons enrolled in professional and vocational, social education and other cultural courses. In addition, 201,686 were enrolled in academic classes of which about one in thirty was taking elementary school courses, almost one half secondary level courses and the remainder university subjects. These represent an important segment of part-time formal education but, nevertheless, omit large numbers in industry and private classes and courses. Again, there were some four million in attendance at public lectures, film showings, and similar events. There is also a great deal of informal education through magazine and newspaper articles, television and radio programs which is impossible to measure.



*The St. Catherine bell hangs high over the quadrangle of Massey College, residence of 102 male students, School of Graduate Studies, University of Toronto.*

*Two new tri-wing residences flank the octagonal Lister Hall Food Services Building on the campus of the University of Alberta, Edmonton. The residence houses 1,200 students.*





*East meets West in Ottawa where John Fisher, Commissioner of the Centennial Commission, welcomes two Saskatchewan students (right) who are enroute to New Brunswick, and two students from New Brunswick bound for Alberta. In 1964, 3,000 students took part in this "Adventure in Learning"—a nation-wide travel and exchange program; in 1965, approximately 6,000 were scheduled to participate.*

Informal education also comes from library books and book purchases. Public Library holdings are a little over 0.8 per capita and increasing slightly. Academic libraries in universities housed over 8,000,000 volumes or over 63 per student in 1961. Some 55 p.c. of urban high schools have central libraries; others depend on bookshelves in the classroom.

This raises the question of setting standards to determine the adequacy of holdings. So far Canadians have not developed any such standards. If they had, such standards would probably need lifting and changing because of an increase in publication, and because computer-based information systems should shortly become fairly common. It has been estimated that there are more than 50,000 scientific and technical journals throughout the world, and the number is now being increased by some 10 to 15 p.c. each year. In addition, the cost of books has risen some 75 p.c. since the war.

Because of the rapid introduction of automation, it is likely that the work-week will be shortened and there will be greater incentive to learn more and to do more. For the most part, this will affect the non-professional, rather than the professional and administrative, classes first, yet the latter are the ones likely to influence policy and to undertake research in the field of leisure.

### *Changes in Provincial Educational Programs*

It is possible to list here only a few of the changes in education in Canada's ten provinces.

For example, following recommendations of the Parent Royal Commission, Quebec provided a Department of Education to replace the Departments of Youth and Public Instruction. It has provided for a Superior Council of Education, a 24-member advisory body. The organization remains in two separate systems, the one French-language, the other English-language.

The second Parent report recommends widening government control to co-ordinate all levels of learning in both systems, although greater changes

will be made in the French language, from kindergarten to university, inclusive of postgraduate work and adult education. The primary level will consist of two divisions of three years stressing command of fundamentals and preparation for secondary school. The secondary schools will promote by subjects, and feature required classes in languages and mathematics, otherwise options.

The Classical Colleges may be integrated into the system and the technical schools as well, and provision will be made for students to transfer from one course to another. The secondary schools will cover the period from the seventh to the eleventh years inclusive and a new level of "institutes" will provide the twelfth and thirteenth years from which graduation provides entrance to university.

Saskatchewan plans to divide the first three years of school into twelve units and to provide flexible promotion based on ability and maturity. The second three years will be organized similarly. Later, the years seven to nine will be somewhat similarly organized, and the last three will be altered to provide several optional courses. It is expected that this should provide a challenge to pupils of all levels of ability within their competence and have a salutary effect on both "drop-outs" and university entrants.

The Montreal Protestant School Board has introduced a "Continuous Progress Plan" for grades one to four and, in fact, several provinces, using a 3-3-3-3 system or equivalent, have considered the first three years as a unit.

Curricular reform is being carried out in all provinces. Manitoba has appointed committees to undertake course revision throughout the elementary school. Ontario has a Curriculum Institute which plans to study aims, content and organization. The Ontario Grade XIII has been criticized vocally, has been the subject of an inquiry, and has already undergone some change to make it more effective for university entrance.



*A library is a happy  
hunting ground.*



*Municipal, regional and provincial public libraries serve rural and urban areas. In addition, bookmobiles provide a supplementary service for many who live far from library centres. Five Canadian universities give degree courses in library science.*

*Though space is at a premium in bookmobiles, readers like to browse.*



Classroom innovations include: team teaching introduced into a number of city schools, the Cuisenaire method in arithmetic, the Initial Teaching Alphabet introduced into classes in Montreal, Halifax, and elsewhere, and programmed instruction used in a number of classes, generally on an experimental basis. In Newfoundland a standard reading achievement test was given to a ten p.c. sample of students in Grade VI.

Something new in organization is planned at Vaudreuil, Hull, and a few other Quebec centres, where a complex of buildings will house secondary, vocational, trade and teacher-training schools, and make use of central sports' fields, cafeterias, library, auditorium, etc., to mutual advantage.

Representatives from the Ontario and Quebec Departments of Education made a ten-day tour of selected American cities to observe other data processing systems before undertaking expansion at home. A committee on data processing, called at the wish of the Ministers of Education, met to consider whether there was need for a centralized system of data processing for all provinces and how this could best be implemented. Some progress has been made in schedule programming by computer, the preparation of report cards, and maintaining of test and other records.

### *Conventions and Assemblies*

Conventions and assemblies form an important part of the life of Canada's educational bodies which include Canada-wide and provincial teachers, trustees, home and school associations, and associations at all levels for all fields of education. In addition to these conventions there are special meetings or conferences convened to attack special problems. In 1964 two special meetings were convened which related education to economics. The first, Education and Productive Society, organized by the Department of Industrial and Vocational Education, Faculty of Education, Edmonton, considered basic theory, the role of vocational technical education, automation and the development of human capital. The second conference, called by the McGill Institute of Education, considered educational finance and the economic aspects of education.

Both meetings were directed towards the role of education in economic and social advancement. The Canadian Education Association scheduled two panels in education planning and the Canadian Council on Research in Education considered the topic for one session. The Education Division, DBS, has produced a fairly comprehensive report in the area following a survey of planning in Canada at all education levels.

A somewhat different gathering was the third meeting of the Commonwealth Education Conference held in Ottawa, August 21st to September 4th. Some 200 educators from thirty-three countries met to consider the Commonwealth scholarship scheme. In addition, the conference discussed adult illiteracy, co-operative planning and mass media techniques.

In April the National Conference of Canadian Universities and Colleges convened a special meeting on International Studies in Canadian Universities.

A new organization, the Canadian Service for Overseas Students, was formed by organizations concerned with the reception and activities of students from abroad. It will co-ordinate services already provided and



*The third Commonwealth Education Conference met in Ottawa in 1964.  
Delegates are at the main entrance to the Parliament Buildings.*

prevent unnecessary duplication. Its headquarters will be in Ottawa. Overseas activity is a two-way street. Canada accommodates some 9,500 students at the higher education level from 150 countries. Approximately 77 p.c. are from the United States and countries of the Commonwealth. Canada has a similar number of students abroad.

Certain Canadian universities have twinning arrangements with African, or other, universities under which Canadian universities accept the responsibility for providing certain programs in other universities. In 1964 McMaster's Extension Department held the first Canadian Overseas Summer School for six weeks in Salisbury, Southern Rhodesia, with Canadian students and professors in attendance.

### *More Expensive Operating Costs*

The cost of operating provincial public school systems has more than doubled for all provinces and increased by four or five times in some areas. The increase reflects not only greater numbers of teachers and higher salaries, but also expanded programs in vocational, technical, and special education. This unprecedented increase has raised problems at all levels of instruction and administration, and the high cost has brought into question the traditional concepts of local control, autonomy, and responsibility for establishments. Emphasis now is placed not only on equalization of educational opportunity but also on the development of each student to the maximum of his ability.

At the elementary-secondary level the trend is towards the introduction of a foundation program under which the provincial authority establishes a minimum level of services which local authorities are required to provide, but which may be exceeded. A uniform rate of tax is collected and, when necessary,

the province contributes whatever is needed to ensure the established minimum. There is, however, a need for determining an equitable sharing of costs between the provincial authority and local boards. At present, about half the provinces have foundation programs.

At the university level the need for the provincial departments to provide more money for university expansion has raised the question of how far the province should assist in co-ordinating the university establishment throughout the province in order to prevent unnecessary duplication and serious omissions in undergraduate and graduate programs.

### Statistics of Canadian Education, 1962-63

Type of School or Course	Total for Canada		
	Schools	Full-Time Teachers	Enrolment
	No.	No.	No.
<b>Full-Time Courses</b>			
Elementary and Secondary Education:			
Public and separate schools <sup>1,2</sup> .....	23,759	172,268	4,369,109
National Defence schools (overseas) .....	22	439	7,302
Indian schools <sup>3</sup> .....	423	1,307	32,549
Schools for the blind .....	6	99	750
Schools for the deaf .....	12	320	2,352
Private schools <sup>4</sup> .....	1,316	10,895	182,818
Higher Education:			
University grade .....	365	11,670	141,388
Teacher Training:			
Teachers' colleges .....	125	1,610	20,956
Faculties of education <sup>4</sup> .....	25	488	11,646
Vocational Education:			
Trade courses (apprenticeship) .....	...	...	11,173
Trade courses (pre-employment) .....	...	...	...
High schools <sup>5</sup> .....	...	...	152,412
Institutes of technology .....	31	1,000 <sup>6</sup>	11,931
Private business schools .....	261	1,071	18,910
Private trade schools .....	305	891	11,718
<b>Totals</b> .....	<b>26,625</b>	<b>201,570</b>	<b>4,810,956</b>
<b>Part-Time Courses for Adults</b>			
Publicly-operated:			
Academic .....	..	..	113,399
Vocational .....	..	..	364,927
Other (social, cultural, etc.) .....	..	..	215,804
Universities and Colleges:			
Academic, for credit toward a degree .....	81	..	88,287
Other (extension, etc.) .....	44	..	128,405
Teacher training institutions .....	..	..	37,614
Private business schools .....	117	..	23,903
Private trade schools .....	96	..	42,005
Public libraries .....	29	..	9,860
Training in industry .....	..	..	61,080

<sup>1</sup> Includes schools in the Territories administered by the Federal Government.

<sup>2</sup> Includes preliminary figures for Quebec.

<sup>3</sup> Day, residential, and hospital schools administered by the Federal Government.

<sup>4</sup> Included under "Higher Education".

<sup>5</sup> Included under "Public and separate schools".

<sup>6</sup> Estimated.

.. Not available.

... Not applicable.



*View of the Douglas Point Nuclear Power Station near Kincardine, Ontario. Built by Atomic Energy of Canada Limited with the co-operation of Ontario Hydro, the plant is Canada's first full-scale atomic power station.*

## Research

# New Secretariat Provides Stimulus

With the creation of a Scientific Secretariat in the Privy Council Office in 1964, Canada moved towards further integration, and stimulus, of research projects.

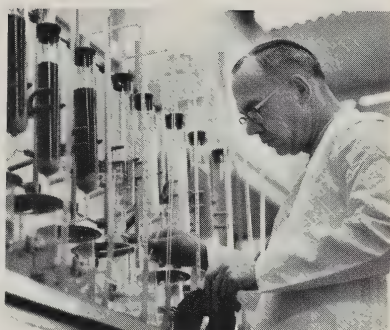
The Secretariat assembles, digests, and analyses information relating to the Government's scientific and technological activities, including inter-relationships with university, industrial, and provincial scientific establishments. First director and organizer is Dr. F. A. Forward, a former head of the Department of Metallurgy at the University of British Columbia.

The Federal Government has been involved in scientific activities since the formation of the Geological Survey shortly after Confederation. Scientific expenditures now constitute about five p.c. of its total budget.

## *National Research Council*

The National Research Council, established in 1916, supports Canadian industry by maintaining Canada's largest and most diversified laboratory complex—ten laboratory divisions in Ottawa and two regional institutions in Halifax and in Saskatoon—engaged in research, standardization work, and testing for which no private or commercial facilities are available.

*An experimental filtering process in the Mines Branch of the Federal Government.*

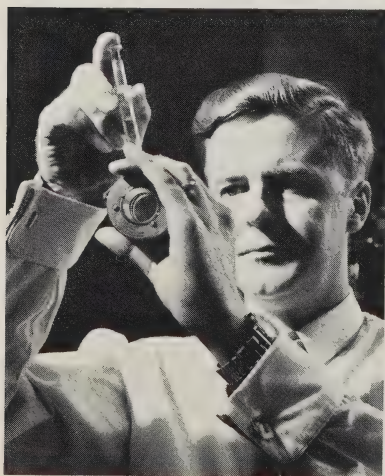


Some 25 Federal Government departments and agencies are now involved in scientific activities. In the last fiscal year, the Department of Agriculture, Atomic Energy of Canada, Limited, the Medical Research Council, the Department of Mines and Technical Surveys, the Department of National Defence, and the National Research Council accounted for some 80 p.c. of all scientific expenditures of the Federal Government.

The proportion of the three types of research—basic, applied or development—varies not only with the scientific field but also with the orientation of the performer. Thus the research of the Department of Agriculture can be classified generally as applied; basic research accounts for approximately half of NRC's expenditures on research; and the Department of Industry supports only development projects.

### *Provincial Research Councils*

Six of the ten provincial governments now have research councils, some with a long tradition of collaboration with industrial firms. In Ontario, con-



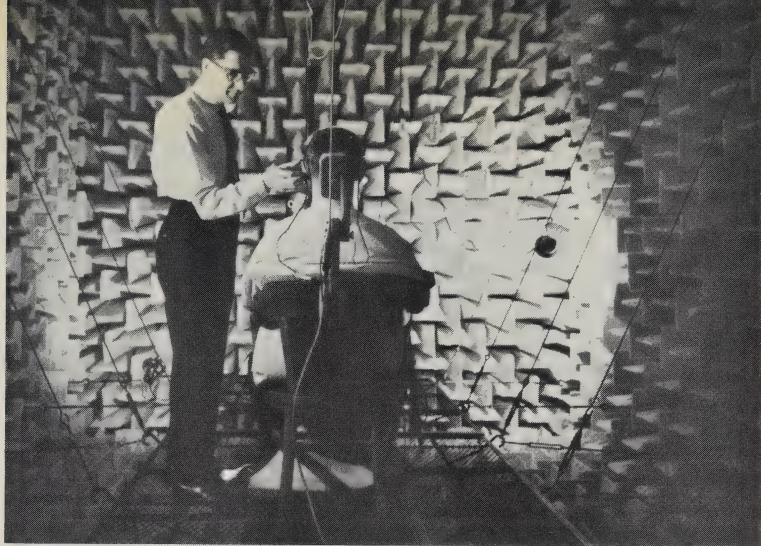
*A scientist prepares a sample of edible oils for checking by infra-red spectrophotometer.*

struction has begun on the Sheridan Park industrial research complex located in 340 acres of parkland at Clarkson, 17 miles west of Toronto. This research centre is a fully-planned community especially designed for industrial research. It is scheduled for completion in 1970. Among the firms which have already built, or are planning to build, at this centre, are: British American Oil Company, Ltd., Consolidated Mining and Smelting Company of Canada, Ltd., Abitibi Power and Paper Company, International Nickel Company of Canada, Ltd., Dunlop Research International, Warner-Lambert Research Institute of Canada, Ltd., and Atomic Energy of Canada, Ltd.

A new multi-purpose industrial development facility will shortly be constructed west of Edmonton for the Research Council of Alberta. This establishment will be available on a lease or contract basis to companies investigating new processes for possible development of Alberta resources. A research project representing an investment of approximately \$1,500,000

*River model studies at the National Research Council, Ottawa, are important to Canadians who seek solutions to overflowing streams in spring months. Some 25 Federal Government departments and agencies are involved in scientific activities.*





*This sound-proof chamber at the National Research Council is for testing listening devices and microphones. The subject is being wired for a sound test on a miniature microphone.*

has already been arranged with Peace River Mining and Smelting Ltd. A similar example of industry's collaboration with Government is provided by the recent move of the Canadian Foundry Research Association from headquarters in Toronto to the Physical Metallurgy Division, Department of Mines and Technical Surveys, Ottawa.

The recently established New Brunswick Research and Productivity Council has acquired space on the University of New Brunswick campus and has staffed Food Science, Natural Resources and Industrial Services groups.

At the Saskatchewan Research Council, emphasis of the current program is on water and mineral resources, agricultural projects not covered by other organizations, and technical assistance to industry. At the Research Council of Alberta, studies have started on high-temperature chemical reactions in plasma arcs and electrically-augmented flames.

Among the noteworthy scientific advances or discoveries at the British Columbia Research Council are: development of a coating formulation for the protection of marine piling against wood borers and for protection of metal against corrosion in the "splash zone"; research on the toxicity of Kraft pulp mill effluent to fish; installation of the Council's oxidation towers for controlling odor and sulphur losses at Kraft pulp mills.

### *University Research*

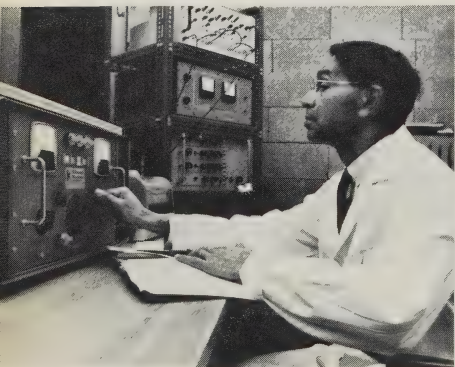
The National Research Council's program to foster research in Canadian universities has continued for almost 50 years. NRC has contributed over 40 p.c. of the total amount of Federal Government aid for research in Canadian universities in each of the five years ending March 31, 1963. In 1963-64, NRC expenditures for these activities reached a new high of \$12,600,000—an increase of 21 p.c. over the figures for the previous year.

At Memorial University of Newfoundland, a seismograph station was recently installed; the University of Montreal has one of Canada's largest computer centres. McGill University has become one of the leading educational centres of aerospace research and has opened new laboratories for research in the problems of hearing. A new 3,000,000-volt nuclear accelerator is to be shared by the physics departments of Ottawa and Carleton universities. The Ontario Government has provided a \$20,000,000 grant to expand teaching and research facilities in the Faculty of Medicine at the University of Toronto. The year 1964 marked the emergence of the University of Waterloo as a partner in Canada's research activity. During the year more than a hundred projects in scientific research were under way. A \$750,000 cyclotron, which took four years to build, is now in operation at the University of Manitoba. This "atom smasher" is the second to be built in Canada and will be used by university physicists to investigate the structure of atomic nuclei and for research involving radioactive isotopes.

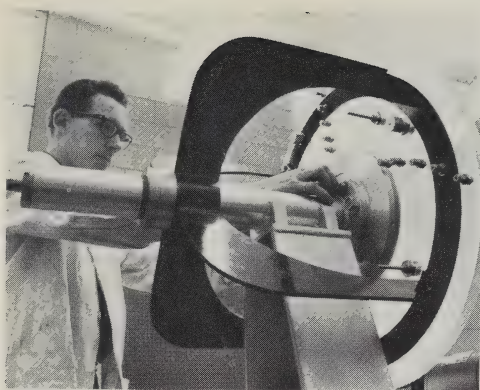
The Canadian Wildlife Service will locate a waterfowl research station on the Saskatoon campus of the University of Saskatchewan. The Saskatchewan Research Council has set up a climatological reference station, the only one of its type in Saskatchewan and the second to be established in Canada. Construction has begun at the University of Alberta on a household economics building for research in nutrition, foods and textiles; an underground radiation research laboratory is to be completed in 1965. The Faculty of Medicine at the University of British Columbia established an eye research unit which will be concerned primarily with the treatment of glaucoma and retinal diseases.

### *Industrial Research*

In addition to the multi-purpose industrial development facilities under construction in Ontario and Alberta, a number of new research centres in industry have been opened, or are to be opened, shortly. Dominion Tar and Chemical Company has opened a new laboratory centre at Montreal and Canadian Liquid Air Limited, a new research and development laboratory; Noranda Mines Ltd., a research centre at Pointe Claire. Shawinigan Chemicals Limited is to build a research and technical service centre on Montreal Island.



*A neutron generator is prepared for an experiment at Carleton University, Ottawa. The National Research Council has fostered research in Canadian universities for almost 50 years and has contributed over 40 p.c. of the total amount of Federal Government aid for research in Canadian universities in each of the five years ending March 31, 1963. In 1963-64 NRC expenditures for these activities reached a new high of \$12.6 million—an increase of 21 p.c. over expenditures of 1962-63.*

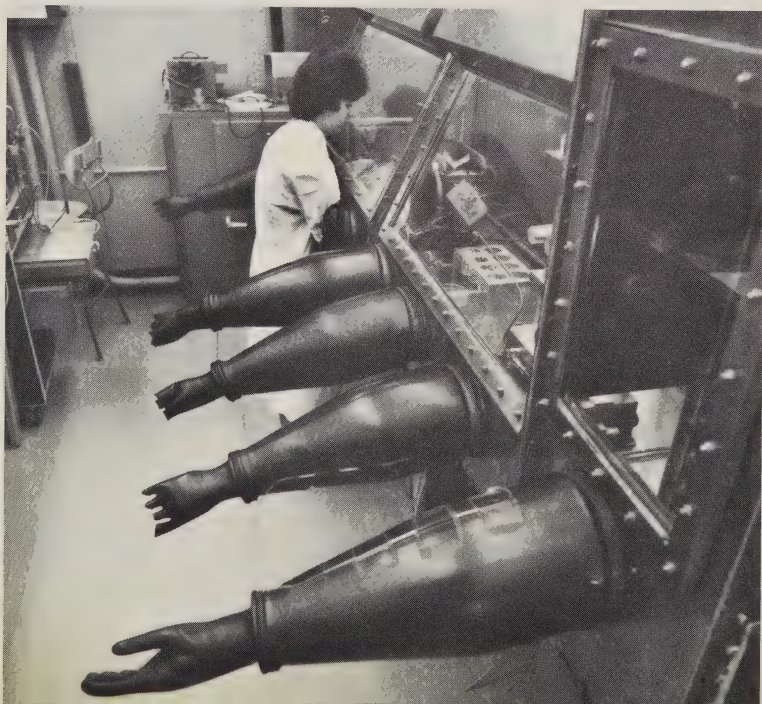


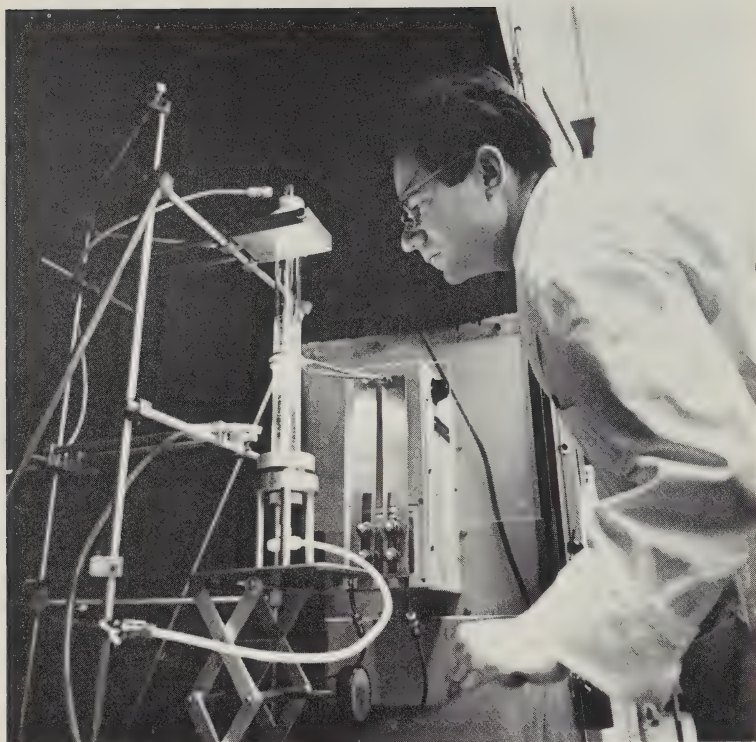
*A student assembles a unit for use in testing effects of rotating discs in jet turbine engines.*

The Steel Company of Canada, Ltd., plans to construct a research centre at Burlington, Ontario. "Exposed" steel in architecture is attracting wide interest all over the world and Stelco's new laboratories will be a showcase of modern steel construction.

In addition, a number of industries have expanded research within existing facilities. Some of this has been made possible by government assistance or

*To remain abreast of the great wave of industrialization sweeping across the world, Canadian industry is increasing its research expenditures. Work here is on transistors in a dust-free box at the laboratories of Northern Electric, near Ottawa.*





*This laboratory experiment involved electricity and gas.*

participation. Last year the Department of Industry through its Defence Development Sharing Program spent some \$19,500,000 in support of 45 development projects by industry.

The Industrial Research Assistance Program, administered through the National Research Council, doubled its budget of \$1,200,000 in 1962-63 to \$2,400,000 in 1963-64; the number of participating companies increased from 44 to 56; research projects, from 62 to 88.

Government research agencies are becoming increasingly aware of their own needs for industrial research orientation. For instance, what is described as the most modern technical railway research centre in Canada has been opened by Canadian National on an eight-and-a-half acre site adjacent to the huge CN hump yard in suburban Ville St. Laurent. At this technical research centre almost a hundred scientists and technicians carry out research in metallurgy, chemistry, physics, chemical and general engineering. The centre will keep the railway in the forefront of transportation technology and will serve the entire CN system including road, rail and water services.

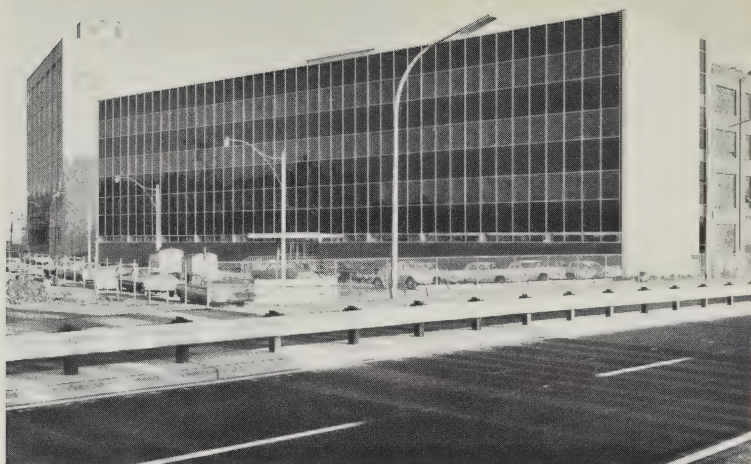
*The Sheridan Park industrial research complex is located in 340 acres of parkland, near Toronto. An estimated \$100 million will be invested in the next six years to provide staff facilities for 6,000 persons. When completed by 1970, the centre will provide an annual payroll of \$42 million. Here, zinc alloy is tested at Cominco's Sheridan Park laboratory.*



*One of the first research centres to be built at Sheridan Park was for the British American Oil Co., Ltd.*



*Zinc plates are tested at the Cominco research centre at Sheridan Park.*



*The laboratories of this new technical centre, Toronto, have an artificial mouth for oral hygiene studies and an electron microscope, capable of magnifying up to 150,000 times, for study of textile structure.*

## Medical Research

Medical research in Canada is mainly carried out in the universities and their affiliated hospitals and institutes. The necessary funds are provided to a large extent by grants awarded to investigators in the various disciplines in the broad field of medicine by both government agencies and private granting bodies.

The government agencies operate on a federal, as well as on a provincial, level, each having its particular field of interest in the support of medical research. In 1938 the National Research Council established an Associate Committee on Medical Research which undertook the support of medical research on a small scale. After World War II this committee was replaced by a Division of Medical Research whose budget increased gradually from \$200,000 in 1947 to approximately \$2,300,000 in 1960. This Division was disbanded in 1960 when the Medical Research Council was established. The Council's budget for the year 1964 amounted to \$6,900,000, a sum used for the support of research through grants-in-aid and the provision of personnel support. The grants-in-aid are made in both preclinical and clinical sciences.

The personnel support consists of three categories, i.e., medical research fellowships to provide training in research, and medical research scholarships and medical research associateships to support investigators and thus contribute toward establishing a group of senior research workers in the universities. Moreover, outstanding medical undergraduates may apply for summer scholarships, which are meant to create an interest in research. In 1964 a total of 72 such scholarships were provided.

Other government sources of support for medical research are the National Health grants, established by the Department of National Health and Welfare in 1948 to assist the provinces in providing health services in such fields as mental health, cancer control, child and maternal health and rehabili-

tation. A portion of these grants may, at the discretion of the provinces, be used for medical research. In addition, the so-called Public Health Research Grant provides for the support of studies that are considered of direct practical value in the diagnosis and treatment of disease.

Funds for medical research related to defence problems have been provided since 1946 by the Defence Research Board both for investigations carried out in its own laboratories and through grants-in-aid of research in the universities.

Finally, the Department of Veterans Affairs supports medical research in its own hospitals, which are particularly suited to the investigation of problems related to chronic disease.

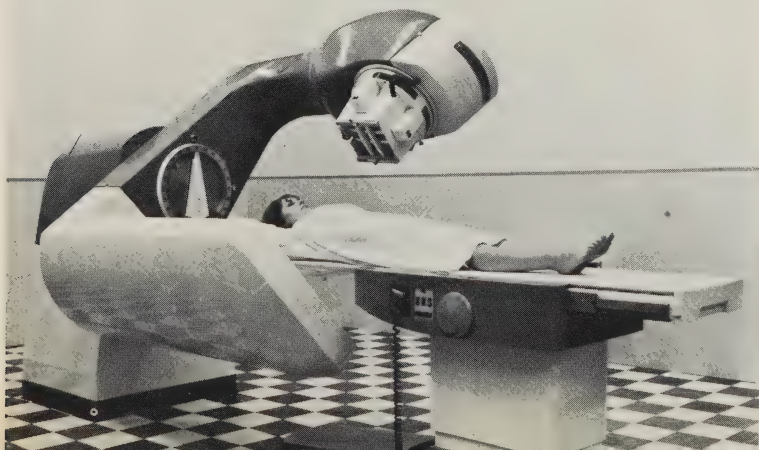
In addition to the federal agencies which support medical research, an important role is played by provincial governments and private foundations. Some funds are also provided by various agencies in other countries such as the National Institutes of Health of the United States. It is estimated that the total amount available for medical research in Canada from all these sources for the year 1964 will be approximately \$18,000,000.

Research carried out in Canadian universities and supported by the agencies mentioned above varies considerably from one university to another. A survey across the country reveals, however, that a few areas are more actively pursued both in the preclinical and clinical sciences.

### *Valuable Biochemical Studies*

Outstanding contributions have been made to biochemical studies of cellular and nuclear enzymes, nucleic acids, steroids, proteins, lipids and carbohydrates. Special emphasis is given to problems of neurochemistry in some centres. The Collip Department of Medical Research at the University

*One of several types of cancer therapy units, designed and built in Ottawa. Similar Canadian units are in clinics in 40 countries.*





*HMCS Cape Scott carried a medical expedition to Easter Island in 1964 for a research study.*

of Western Ontario is a well established institute devoted to the study of various problems in biochemistry. Biochemical studies related to diseases such as endocrine disorders and cancer are receiving increasing attention, particularly in the clinical investigation units of university-affiliated hospitals.

Similarly, physiologists and pharmacologists are engaged in the investigation of a wide range of problems. Functional studies on various aspects of the nervous system, the cardiovascular system, carbohydrate metabolism, electrolyte metabolism and the endocrine system are yielding important results in various aspects of muscle activity. The Montreal Neurological Institute at McGill University, the Banting and Best Department of Medical Research at the University of Toronto and the Institute of Experimental Medicine and Surgery at the University of Montreal have already achieved international reputation in these fields. Studies on the many aspects of blood coagulation, both fundamental and applied to diseases of the blood, are actively pursued and, in view of the climate of Canada, problems on cold physiology are of particular interest.

Bacteriologists have recently become engaged in studies dealing with the antigen-antibody problem and with questions concerning the characteristics of viruses. The Connaught Medical Laboratories in Toronto and the Institute of Microbiology and Hygiene in Montreal are well known for their work in this field. The development of the electron microscope as a tool in bacteriology, pathology and anatomy has been a great stimulus for research in these disciplines since it allows the formulation of problems which require a high magnification. Studies of the abnormal structure in various states, such as arteriosclerosis, liver disease, hypersensitivity, tumour growth, are evidence of this in many pathology departments. Methods of electron microscopy, radioautography, microradiography, X-ray microscopy and histochemistry are enabling many Canadian investigations to contribute significantly to the understanding of ultrastructure and cellular structures. Obviously such studies have greatly influenced the development of many anatomy departments in the country.

An increasing interest in various cytogenetic problems is reflected by recent research on congenital anomalies; in some aspects Canada has pioneered in this field.

Undoubtedly the support of research in the so-called basic medical sciences has gone hand in hand with, and has also stimulated, the development

of clinical investigations particularly in departments of medicine and surgery. The creation of metabolic and clinical investigation units in many universities bears this out as well as the excellent progress made on studies of hypertensive and respiratory diseases.

Apart from the Department of Experimental Surgery at McGill University many centres have developed research in this field in recent years. Problems concerned with gastric secretion following gastrectomy, transplantation, blood vessel anastomosis, bone repair, hypothermia are of particular importance in this regard.

The increasing interest of physicians as well as surgeons in collaborating with physicists and engineers is evident from the creation and support of biomedical engineering departments in a few centres. Due also to the support available through the National Cancer Institute and the Heart Foundations, national and provincial, great strides are being made towards the further development of research on the fundamental and applied aspects of cancer and heart disease.

Studies of problems related to cancer are carried out by individual investigators as well as by groups of investigators in special cancer research units maintained in some centres by the National Cancer Institute. Cardiac units in many medical schools are evidence of interest in research on the part of clinicians in this field.

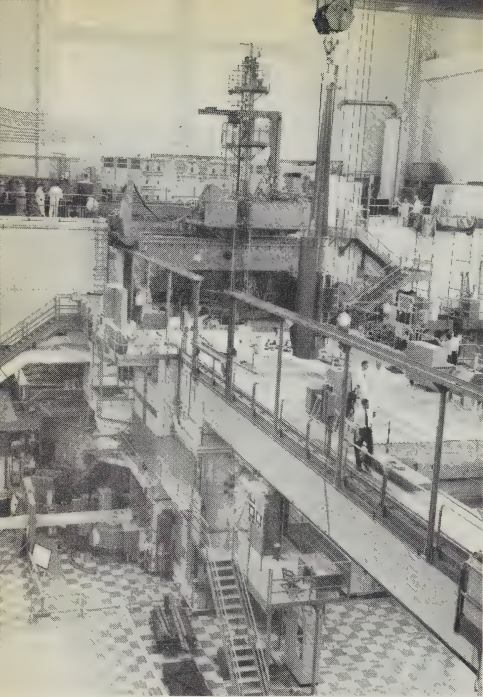
Finally, there has been an expansion all across the country in studies, both preclinical and clinical, related to the vast field of mental disease. The Allan Memorial Institute in Montreal has already established itself as one of the leaders in this field.

## Atomic Energy

It is now 20 years since the first Canadian nuclear reactor went into operation. These years have been profitably spent in forwarding nuclear science, in finding ever more extensive uses for radio-isotopes, and in developing economic means for producing electricity from the energy stored in the

*An aerial view of the Chalk River Nuclear Laboratories of Atomic Energy of Canada Limited. Its major activities include development of systems for nuclear power stations, production of radioactive isotopes and fundamental research in physics, chemistry, biology and medicine.*





*There are now five reactors at the nuclear centre at Chalk River, Ontario. This view shows the NRU reactor which provides neutrons for research experiments and for the production of isotopes. This reactor is not itself used to produce electricity, but circuits passing through the reactor are employed to test out fuel and components under the conditions that exist in nuclear power systems.*

uranium nucleus. This latter task has, in fact, occupied most of the efforts of Canada's nuclear engineers in the last ten years, and their efforts have been rewarded by the knowledge that, in certain regions, nuclear power stations can now more than meet the competition from coal-fired systems.

In 1964, Ontario Hydro decided to build a nuclear power station made up of two units, each with its own nuclear reactor and generating system; together they will produce a million kilowatts of electricity. These units are expected to come into operation in 1970 and 1971, and a site at Pickering, just outside the limits of metropolitan Toronto, has been approved. It is contemplated that the station will ultimately be expanded.

The nuclear reactors for the Pickering station will be fuelled with natural uranium and will use heavy water both to facilitate the fission chain reaction and to carry away the heat produced. They will thus represent a further scaling up of the previous Canadian nuclear-electric stations. These are the Nuclear Power Demonstration (NPD) station at Rolphton, Ontario, and the Douglas Point station on the shore of Lake Huron. NPD produces 20,000 kilowatts and it operated throughout 1964 at a capacity factor of over 80 p.c. Douglas Point is nearing completion and is expected to begin feeding 200,000 kilowatts into the Ontario Hydro grid in the spring of 1966.

In the meantime, development work has continued and it now seems economically possible to use ordinary water instead of heavy water to carry the heat from a reactor core fuelled with natural uranium. Previously it had been considered that the adverse effect of ordinary water on the fission chain reaction would be too great. Although the system using ordinary water is still in the development stage, it offers great promise for the early 1970's and the governments of Canada and Quebec have agreed in principle to work towards establishing a prototype station of this kind in the Hydro-Quebec system.

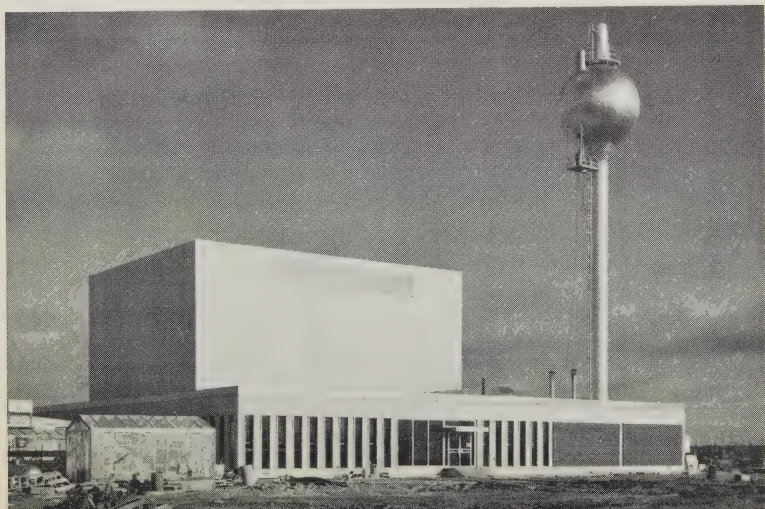
Nuclear power as developed in Canada depends on two key materials: uranium and heavy water. Fortunately Canada is endowed with large deposits of uranium ore. In the 1950's a great industry was built up to mine and refine uranium, and this commodity became an important export item in Canada's balance of trade. More recently there has been a slackening of overseas demand resulting in the closing of some mines and the slowing down of others. However, now that nuclear power is becoming increasingly competitive in many places in the world, Canada can look forward to a reasonably early revival of the industry. The uranium industry now involves not only operations at the mines, but also the highly sophisticated processing and fabrication work needed to put the material in a form capable of withstanding several years in the heart of a reactor.

The other essential commodity is heavy water. In 1963 the Government of Canada made guarantees to a company which is now building a 200-ton-per-year plant at Glace Bay, Nova Scotia. It was soon realized that even larger quantities would be needed, and agreement has recently been reached for another plant, using a different process, to produce 300 tons per year. This plant will be at Estevan, Saskatchewan.

In addition to this emphasis on nuclear power, other peaceful applications of atomic energy have not been neglected. At Chalk River, Ontario, Canada is operating two large reactors that, among many other things, produce large quantities of highly-active radio-isotopes.

Canada pioneered the application of radioactive cobalt for the treatment of cancer and has gone on to use this same isotope for many industrial purposes. Substantial plants have already been built in Canada and abroad to employ this isotope to sterilize pre-packaged medical supplies. Another plant will use it to inhibit sprouting in stored potatoes. In addition, many compact units have been brought into use here or sold abroad for special industrial procedures or for research.

*At the Whiteshell Nuclear Research Establishment of Atomic Energy of Canada Limited at Pinawa, Manitoba, WNRE is conducting engineering studies related to the development of nuclear power stations.*



Atomic energy in Canada is a co-operative effort that involves many different institutions. Some of these are agencies of the Federal Government, others are agencies of provincial governments. Private industry is taking a rapidly increasing share of the activity.

The Atomic Energy Control Board was established by federal statute and works with other agencies to see that Canada's activities in this field are carried out safely and in accordance with Canada's responsibilities to the international community. Eldorado Mining and Refining Limited is a government-owned company that had overall responsibility for fostering the uranium industry and for honouring large uranium supply contracts with our allies. Atomic Energy of Canada Limited is another government-owned company: it operates the principal Canadian nuclear research establishments at Chalk River, Ontario, and Pinawa, Manitoba, and, at other sites, designs and develops nuclear power stations and promotes the utilization and sale of radio-isotopes and associated equipment.

Private industry is also involved in the conduct of nuclear development work and in the construction of equipment. Hitherto most of such work has been carried out under contract to Atomic Energy of Canada Limited, but certain companies are now in a position to offer not only components but also complete nuclear research reactors and nuclear power stations at fixed prices and to construct these in Canada or abroad.

The achievements of these various organizations have indeed had a remarkable impact overseas. By the Statute of the International Atomic Energy Agency, Canada is recognized as one of the five countries most advanced in nuclear endeavour. Especially close collaboration is maintained with the United States and the United Kingdom, and Canadian reactors and other nuclear facilities have been put at the disposal of workers from these and many other countries. The main facility at the Atomic Energy establishments in India is a reactor built jointly by Canada and India, and patterned after one at Chalk River. India is also building a nuclear power station that duplicates the one at Douglas Point. Canadian isotopes and irradiation equipment have found a world market. And the world-wide respect earned by Canadian nuclear research indicates that this country is likely to remain in the forefront of nuclear advance for many years to come.

*At the third United Nations International Conference on the Peaceful Uses of Atomic Energy, Geneva, Dr. W. B. Lewis (left) shows a model of the Douglas Point Nuclear Power Station to U Thant, Secretary-General of the United Nations and Prof. Vasily S. Emelyanow, USSR president of the conference.*





*During the 1964-65 theatre season, the Vancouver Playhouse Theatre Company presented The Taming of the Shrew.*

### The Arts in Canada

## Centennial Plans Multiply

Canada will celebrate the Centennial of Confederation in 1967 and it is already apparent that the arts will play an important part in these celebrations. The Centennial, in turn, will leave its mark on the development of the arts in Canada.

Many cities plan to erect cultural centres. A number will be assisted with funds specially provided for centennial projects. One of the most ambitious is a centre for the performing arts in Ottawa, which is being built by the Federal Government, and is due to open in 1967. This handsome complex of buildings will be located in the heart of the city and will include a combined concert hall and opera house seating 2,300, a theatre seating 900 and a studio theatre for 300.

At the federal level, direct government support for the arts is provided through the Canada Council, established in 1957 with an Endowment Fund of \$50,000,000. The Council is also charged with responsibility for the encouragement of the humanities and social sciences. At its inception it was given an expendable fund of \$50,000,000 to provide half the construction costs of university buildings intended for either of these purposes. About one third of the approximately \$3,000,000 annual income from the Endowment



*Practising for the Folk  
Festival of the Canadian  
National Exhibition,  
Toronto.*

Fund is devoted to grants to arts organizations, and scholarships and fellowships to individual artists. The Federal Government also has an important influence on the artistic life of Canada through such other agencies as the National Gallery, National Film Board and the Canadian Broadcasting Corporation.

The financing of the arts in Canada is a co-operative venture. Private donors—individuals, corporations and foundations—play significant roles. Provincial and municipal governments are also important patrons, although there is great variation in the nature and extent of the support which they provide.

The principle of support for the arts is long-established in the Province of Quebec where the Department of Cultural Affairs is enlarging its role, acknowledging a special responsibility towards the arts in French Canada and in making French-Canadian artists better known abroad. The province of Saskatchewan has its own Arts Board, and Ontario's Council for the Arts, ending its first year, provides generous aid to arts organizations. With or without the establishment of special agencies for the purpose, all provinces encourage the arts through direct grants or educational and community programs. The fruits of this collaboration are increasingly in evidence throughout Canada.

## Festivals

The best known of Canada's summer festivals is the Stratford Shakespearean Festival in the Ontario town which takes its name from Shakespeare's birthplace. Canada's Stratford has forged special links with still another English town. The design for the Chichester Festival theatre, whose director is Sir Laurence Olivier, is based on the open-stage concept realized in Canada by Sir Tyrone Guthrie. It was, therefore, especially significant that the Canadian company should be invited to celebrate the quadricentenary of Shakespeare's birth with an appearance at Chichester. For the occasion, the Stratford company revived Artistic Director Michael Langham's productions of *Love's Labour's Lost* and *Timon of Athens*. Associate Director Jean Gascon, who is also Director of Le Théâtre du Nouveau Monde, displayed Canada's dual heritage with an English-language production of Molière's *Le Bourgeois Gentilhomme*. English critics acknowledged the Canadian company's mastery of the open stage and were warm in their welcome to a troupe which has become, in little over ten years, one of the world's most important classical companies. *Le Bourgeois Gentilhomme* remained in the repertoire for the summer season, and was joined by Mr. Langham's production of *King Lear* and *Richard II*, directed by Stuart Burge.

The Avon Theatre, now owned by the Festival Foundation, was renovated for the 1964 season and is now a more comfortable and efficient home for the musical theatre, which has become an important part of the annual festival. Jean Gascon directed an attractive production of *The Marriage of Figaro* and Gilbert and Sullivan were again represented this year by *The Yeomen of the Guard*.

Music plays an important part in the Stratford summer and the 1964 program included fifteen concerts, with the essential core of musicians provided by the Festival Orchestra. Elmer Iseler's Festival Singers, formed at Stratford in 1955, performed an all-Bach program with Lois Marshall, and soloists of the National Ballet performed Grant Strate's *Electre*, to electronic music by Henri Pousseur. The visual arts were represented by an exhibition collected by Alan Jarvis, *Faces of Canada*, a record of Canadian portrait painting which was an appropriate successor to last year's landscape exhibition.

The Montreal Festival's twenty-ninth summer season offered an exclusively musical program. Conductor Wilfrid Pelletier directed an attractive evening of French opera, which featured such well-known Canadian singers as Maureen Forrester and Richard Verreau. Other guest conductors were Seiji Ozawa, due to assume the direction of the Toronto Symphony Orchestra in 1965, and Stanislaw Skrowaczewsky of Poland.

In Vancouver, the Seventh International Festival was dedicated to a French theme. Charles Munch conducted a concert performance of the Berlioz *Damnation of Faust* as well as the opening concert of music by other French composers. La Compagnie Canadienne du Théâtre-Club from Montreal visited Vancouver with a French-language production of the *Merchant of Venice* and other visitors included the Stars of the Paris Opera Ballet and Zizi Jeanmaire. A more recent arrival on the summer festival scene was the Shaw Festival at Niagara-on-the-Lake, Ontario, where *Heartbreak House* and *John Bull's Other Island* were included in the program.

*The Marriage of Figaro was one of the presentations of the 1964 season of music, Stratford, Ontario.*





*La Bourgeois Gentilhomme was presented at the Stratford, Ontario, theatre during the twelfth annual season of drama, June 15 to October 3, 1964.*

## Theatre

Canadian theatre is now well into a new phase in its history. From the flourishing amateur theatre which produced the annual Dominion Drama Festival, through summer stock and short-lived repertory companies to the age of Le Théâtre du Nouveau Monde, Le Rideau Vert and the Stratford Festival, Canadian talent has found expression in the live theatre, while relying frequently on the CBC as a more generous source of income and another medium of expression. The present period seems to be the "Age of Regional Theatre", though many of the earlier manifestations continue to thrive.

Outside the largest metropolitan areas, professional companies are now established in Vancouver, Winnipeg and Halifax; in Quebec City, Le Théâtre de l'Estoc is working with determination towards fully professional status. The Manitoba Theatre Centre, formed in 1958 by John Hirsch and Tom Hendry, is the eldest of these theatres. It has an eight-month season of major productions, a young company which tours schools in the Winnipeg area, a theatre school and a studio series. In addition, the MTC, which is subsidized by substantial private patronage and grants from Metropolitan Winnipeg,

the Province of Manitoba and the Canada Council, frequently tours western cities and towns. Its productions in 1964 included light pieces like *Little Mary Sunshine* and *The Gazebo*, but the year began and ended with two classic plays which were also substantial successes with the public. Both of these were directed by Mr. Hirsch. The year opened with *A Midsummer Night's Dream*, and *Mother Courage* was produced late in the fall season. The Brecht production was a milestone in the history of the Manitoba Theatre Centre. The production drew appreciative critics from other Canadian and American cities as well as capacity audiences.

The Neptune Theatre ended its first season in April 1964, with *Diary of a Scoundrel* translated from Moscow to mid-nineteenth century Halifax. In June the company visited Charlottetown's new theatre, part of a complex built to celebrate the centennial of the 1864 meeting of the Fathers of Confederation in the capital of Prince Edward Island.

The summer season in Halifax was followed by a tour of Nova Scotia and New Brunswick with Artistic Director Leon Major's lively production of *Twelfth Night*. Charlottetown enjoyed an active summer season which included *The Best of Spring Thaw*. Mavor Moore, who directs the Confederation Centre's summer program, was thus able to welcome his perennially successful revue after an unprecedented coast-to-coast tour.

In Vancouver the Playhouse Theatre appointed Malcolm Black as Artistic Director at the end of its first season. Mr. Black had already directed two productions and brought new life to the Playhouse company with his fall opening of *Ring Round the Moon*, a production beautifully designed by Charles Evans. The University of British Columbia's new Frederick Wood Theatre serves both the university and community audience, and amateur companies in the region have banded together in a unique venture to acquire the Metro Theatre which can house the productions of member groups. Elsewhere in the Western Provinces, the activity of Gordon Peacock's Studio Theatre on the Edmonton campus of the University of Alberta is noteworthy and the Calgary

*Television drama is popular with Canadian audiences. The Trial of Dr. Fancy was presented in Show of the Week.*



Allied Arts Centre has built its own theatre and developed a new program under Irene Protheroe.

The French-language theatre in Montreal is still fertile although some long-established companies have faced difficulties that perhaps result in part from the very abundance of theatrical activity in Montreal. Le Rideau Vert under Yvette Brind'amour has, however, enjoyed a fairly stable existence since settling at the Stella Theatre in 1960. In 1964, M. André Malraux, France's Minister of Cultural Affairs, who had seen the production during a visit to Canada in 1963, invited the company to play in Paris. *L'Heureux Stratagème* by Marivaux was warmly welcomed in the French capital in June. Another Canadian visitor to Paris in 1964 was the internationally known chansonnier, Félix Leclerc, who took his own creation *Le P'tit Bonheur* to France in December after a successful run in Montreal. Both these ventures were made possible through the assistance of the Department of Cultural Affairs of the Province of Quebec.

Le Théâtre du Nouveau Monde under Jean Gascon announced in April 1964, that it would reorganize as a non-profit foundation. The best known of the Montreal companies, the TNM, seeks a more secure basis for artistic development and one of its most significant actions has been the appointment of Jacques Languirand as dramaturge. After a summer season at Repentigny the company returned to the Orpheum in Montreal where the artistic success of the fall season was a remarkable production of Strindberg's *La Danse de Mort* with M. Gascon and Denise Pelletier. The theatre of the *avant-garde* is not neglected in Montreal, where two amateur companies and one professional group give local audiences unusual opportunities to see

*Orchestra and band training, Banff, Alberta.*





*Dance of the women in the suite The Pacific Coast was presented in Montreal.*

modern works rarely performed in Canada. Les Apprentis-Sorciers acquitted themselves well in plays by Brecht and Dürrenmatt, while Les Saltimbanques scored in plays by Jean G  net, Boris Vian and Murray Schisgall. The professional company l'Egr  gore is now established in its own theatre.

Touring theatre has been particularly important to Canada, with its widely-dispersed population. The Canadian Players was originally formed in 1954 by a group of Stratford actors who wished to work together during the winter season and has since visited large and small communities throughout Canada and the United States. In 1964 the company's new manager, Tom Hendry, gave the Players a new direction when he arranged for its two companies to confine their tours to Canada. For the first time the Players produced an original work, *All About Us*, which presented a talented company in a survey of Canadian history using documents and incidents of various periods brought together by playwright Len Peterson who also wrote some original material for the production.

Les Jeunes Com  diens, a group of French-speaking graduates of the National Theatre School, set out on a second successful tour of English Canada in the fall of 1964. These lively young people gave delighted English-speaking audiences, mainly high school students, a valuable introduction to the French theatre with a program of Moli  re. Under the sponsorship of Quebec's Conservatoire d'art dramatique, a touring company visited many small centres throughout the province, providing them with a rare opportunity to see professional performances of the French classics.

Toronto's Crest Theatre has been for more than ten years the mainstay of indigenous professional theatre in the city. Founded by Donald and Murray



*A scene from The Nutcracker which was presented by the National Ballet of Canada.*

Davis and their sister Barbara Chilcott, the Crest has been an outlet for many of the best-known talents in the English-language theatre. In 1964 however, serious financial difficulties forced the postponement of the opening of the new season. After a campaign for funds which raised over \$75,000, the Crest was able to re-open on New Year's Eve with Iris Murdoch's *The Severed Head*.

While Toronto continues to rely heavily on touring productions from the United States, other theatrical activity is not lacking. George Luscombe's Workshop Productions is devoted to the group theatre concept. Jack Winter's play about Saint Joan, *Before Compiègne*, was re-worked for a spring production and was presented independently in Stratford's Queen's Park during the summer. Ed Mirvish, owner of the Royal Alexandra Theatre, prepared to open a studio theatre, the Poor Alex, and producer Sylvia Train presented a new musical, *Evelyn*, by Milton Carman, Allan Mannings and Alex Barris at the Crest.

The 1964 Dominion Drama Festival provided the happy occasion for the opening of the theatre at the Confederation Centre in Charlottetown in May. The best play of the Festival, adjudicated by the English drama critic Philip Hope-Wallace, was *A Taste of Honey* by Toronto's Barn Players. Les Compagnons de Gil from Montreal took three awards with their production of an original play, *La Quintrala*, by Mme Gil Harchoux-Vuillaume.

The regional theatres, as well as the Stratford Festival and the CBC, are looking more and more to the National Theatre School for new young talent.

The co-lingual School, whose program follows many of the theories of its honorary director, Michel Saint-Denis, trains designers and directors as well as actors. Eight months of the year are spent in Montreal and two months at Stratford during the Festival. The School is helping to provide the talents and skills that will be needed with the expected upsurge of theatrical activity associated with the celebration of Canada's Centennial in 1967.

## Music

It would be difficult to exaggerate the importance of the CBC to music in Canada. Broadcasting is not only important in itself, it is the partner of live music in many cities. Members of CBC orchestras and regular network performers are often, at the same time, players in local symphony orchestras and teachers at local conservatories.

In Vancouver, Winnipeg, Toronto, Montreal and Halifax the local orchestras are able to hold their players due in large measure to the supplementary income provided by broadcasting. The decision of the CBC to disband its own symphony orchestra and to use the Toronto Symphony Orchestra (made up almost entirely of the same players) was therefore an important event of the musical year, even though the immediate practical effects have not been extensive. The Symphony and the CBC hope that this move will be to their mutual benefit.



*Les Grands Ballets Canadiens in Variations for Four. This is Canada's youngest professional ballet company. It was founded by a Latvian immigrant of Russian parentage in 1952.*

The Montreal Symphony Orchestra ended its biggest and busiest season in 1964. Its move to the new 3,000-seat concert hall of La Place des Arts brought a large new audience and doubled its subscription revenues. The Orchestra also gave a subscription series in Ottawa and a summer season at the Chalet on Mount Royal.

L'Orchestre Symphonique de Québec is one of Canada's most travelled orchestras, since it gives over thirty concerts a year in smaller centres of the province. The Vancouver Symphony also makes touring part of its program; this year's spring visit to British Columbia's Kootenays was the last to be led by retiring conductor Irwin Hoffman. Mr. Hoffman's successor is Meredith Davies.

Halifax also appointed a new conductor at the opening of the 1964-65 season; there John Fenwick follows Leo Mueller. The Winnipeg Symphony under Victor Feldbrill showed the place it has won for itself in the community when a special supplementary campaign virtually eliminated an accumulated deficit of approximately \$50,000.

Among Canadian symphony orchestras the National Youth Orchestra occupies a very special place. Founded in 1960, the NYO draws players in their teens and early twenties from all parts of the country and gives them intensive instruction from top Canadian and American teachers. In 1964 the Youth Orchestra followed an earlier successful western tour with a tour of Eastern Canada which opened in Toronto's O'Keefe Centre and included Ottawa, Montreal, Quebec City, Fredericton, Charlottetown and Halifax.

The enthusiasm of critics and audiences for the skill, charm and dedication of these young players has been unparalleled and their high standard of performance holds much promise for Canadian music. Conductors for the 1964 tour were Victor Feldbrill of Winnipeg, and John Avison, conductor of the CBC Chamber Orchestra in Vancouver.

*A country dance on television in the series Show of the Week.*





*Les Fêtes d'Hébé by Jean-Philippe Rameau was a popular presentation in 1964. It was presented to mark the centenary of the death of the great French composer.*

To serve young audiences, Les Jeunesses Musicales du Canada has organized concert circuits, principally in the province of Quebec, but now developing in the Western Provinces and the Maritimes. These circuits present performers, many of them Canadians, in lecture-recitals open to members under the age of 30. JMC's annual National Music Competition was won in 1964 by Dale Bartlett, 27-year-old pianist from Lethbridge, Alberta. The JMC also operates a large summer camp of the arts at Mount Orford, Quebec. The Banff School of Fine Arts is of course an even older centre of summer study in the arts. Operated by the University of Alberta, the School is beautifully located in the famous resort town in the Rocky Mountains.

The concert circuits of Les Jeunesses Musicales are particularly important because there are few Canadians managing concert artists and hence few agents who wish to concentrate on Canadian artists. While Canadians are heard at home under foreign management there are still too few opportunities for younger performers to find an audience in their own country.

In an attempt to offer some additional openings, the Canada Council sponsored a University Concert Series in collaboration with nine universities across the country. The artists chosen to participate by an expert panel were Michel Dussault, pianist; Fernande Chiochio, contralto; Pierrette Lepage, pianist; Jean-Claude Corbeil, bass; and the Duo Pach, violin and piano. Critical response to the series was good and the artists gained valuable recital experience but the difficulty of organizing the campus audience led the Council to suspend the series.



*An ethnic group practises a Ukrainian dance for the Folk Festival of the Canadian National Exhibition, Toronto.*

Choral music has a traditionally important place, especially in English Canada. Montreal's Bach Choir under George Little has won recognition both at home and abroad. A new force in this field has been Elmer Iseler's Festival Singers, best known for performances at the Stratford Festival and for broadcasts with the CBC Symphony under Stravinsky in the composer's own works. In 1964 Mr. Iseler was appointed director of the long-established Toronto Mendelssohn Choir. An important event of the choir's 1964 season was the first Canadian performance of Benjamin Britten's *War Requiem*. In French Canada some of the universities have shown particular interest in choral music, particularly Laval University in Quebec City and St. Joseph's in Memramcook, New Brunswick. Les Disciples de Massenet in Montreal is perhaps the best-known independent choir in French Canada.

The shortage of string-players, felt in many countries, is particularly acute in Canada and has hampered the development of chamber music in Canada. Two fine groups have, however, established an honourable record. Dr. Boyd Neel's Hart House Orchestra in Toronto is now in its eleventh season. Dr. Neel has always emphasized the importance of touring and new audiences. In 1964 he took his orchestra to communities in Ontario under the joint sponsorship of the Ontario Council for the Arts and the Canada Council. Dr. Alexander Brott's McGill Chamber Orchestra, in addition to its regular concerts at Redpath Hall, ended its third consecutive series at the Montreal Museum of Fine Arts in 1964. Vancouver's Cassenti Players under George Zukerman are popular visitors to many centres in the Western Provinces and the Northwest Territories.

## **Ballet**

The Royal Winnipeg Ballet is the eldest of Canada's three professional companies by virtue of its amateur origins in 1938. In 1964 the company reached a new peak with an unprecedented summer season focussed on per-



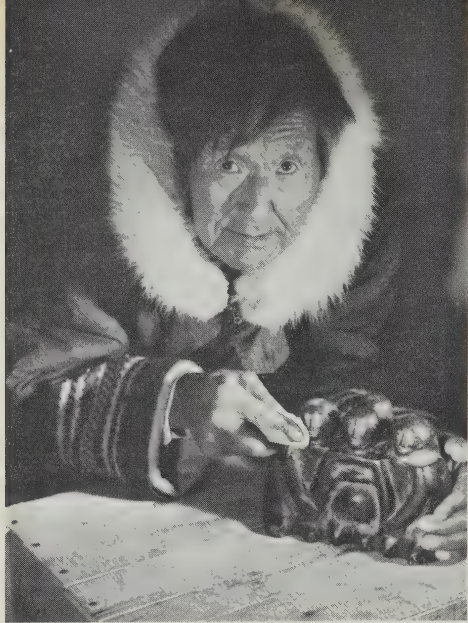
*Postwar years have seen a virtual flowering of the arts in Canada—the result of more leisure for artistic endeavours, a keener interest on the part of business and private collectors in objets d'art, and enthusiasm generated by newcomers to Canada.*

formance at Ted Shawn's dance festival at Jacob's Pillow, Massachusetts. New York critics acclaimed the vigour of Arnold Spohr's young western company, particularly in the works of Brian Macdonald, who was appointed official choreographer to the company this year. Mr. Macdonald retains this connection, although he has now succeeded Anthony Tudor as Director of the Royal Swedish Ballet. New to the repertoire this year was Macdonald's *Pas d'Action*. His *Aimez-vous Bach?* delighted eastern audiences on the company's fall tour.

Toronto's National Ballet acquired a major work in John Cranko's *Romeo and Juliet*, which had its première in April at La Place des Arts, where the company was supported by the Montreal Symphony Orchestra. Designed by Jurgen Rose after the production which he created for Cranko in Stuttgart, West Germany, this colourful and dramatic ballet alternated Stuttgart's



*Micmac Indians of New Brunswick have received acclaim for handicrafts based on the ancient legends of their people.*



*In the Far North, Eskimo artistry is revealed in prints and sculptural works.*

Marcia Haydee and Ray Barra in the title roles with the National's Galina Samtsova and Earl Kraul.

Assistant to Artistic Director Celia Franca and author of several works in the company's repertoire, Grant Strate saw the creation in Ottawa, early in 1964, of his *House of Atreus* set to music by Harry Somers and with sets and costumes by Toronto artist, Harold Town. The National Ballet opened its 13th season at the O'Keefe Centre with a new *Nutcracker*, which Jurgen Rose returned to Toronto to design.

Youngest of the Canadian companies, Les Grands Ballets Canadiens was formed by Ludmilla Chiriaeff and is based in Montreal. In 1964 the renowned English dancer and choreographer Anton Dolin joined the company as artistic adviser, after having staged his *Pas de Quatre* in Montreal the previous season. Returning to Canada after studies and appearances with Leningrad's famous Kirov Ballet and a season with the Festival Ballet in London and Europe, David and Anna-Marie Holmes were featured during the 1964-65 season. A new ballet, *Medea*, with choreography by Les Grands Ballets' Brydon Paige set to electronic music by Georges Savaria was introduced at the outset of the new season.

## Opera

Canada has been for many years a producer of operatic talent but much of it has been exported for lack of a domestic market. That situation began to change with the formation of the Canadian Opera Company, which emerged in the mid-fifties from the Opera School of the Royal Conservatory of Music in Toronto.

Today this company has an important, if brief, season in Toronto and a touring group which presents appropriately adapted operas in centres large and small throughout the country. In the spring of 1964, the touring company performed *Die Fledermaus* in Ontario, the four Atlantic provinces and a few cities of the Eastern United States. The three-week fall season at Toronto's

O'Keefe Centre included *Aida*, *Carmen*, *La Traviata* and *Madame Butterfly* as well as the popular Strauss opera.

In Montreal, Madame Pauline Donalds has for many years kept opera before the public and, in 1964, her Opera Guild gave *Don Giovanni* for two performances at La Place des Arts. The Montreal Symphony Orchestra has also entered the field of opera production, and in February 1964, its Musical Director, Zubin Mehta, conducted a fine performance of *Tosca*. *Carmen* was produced in October.

Hopes for a permanent company in Montreal were aroused by Mayor Jean Drapeau, who visited many of the leading European centres of operatic production in the spring and later announced to a special meeting of interested parties his ambitions for La Place des Arts as a home for opera.

The Vancouver Opera Association extended its activities in 1964, offering a total of three weeks during the course of the year. Meredith Davies conducted *The Barber of Seville*; *La Bohème* alternated with *The Consul*. The new season opened in November with *The Marriage of Figaro*. With wise management and careful programming, the VOA has won for itself a substantial following in Vancouver.

## National Film Board

In its role as government film agency the National Film Board produces and distributes films for theatrical, television and 16mm community showings. In addition to original films made for these purposes, the Board also produces news-stories, newsclips, trailers, filmstrips, and still photographs.

During the fiscal year 1963-64, the Board produced 386 motion picture items, including 81 original films, 88 revisions, 85 foreign-language versions, 47 news-stories, and 85 other motion picture items. The Board also produced 66 filmstrips, 26 picture stories, and 4 bilingual slide sets. It won 64 awards at international film festivals and five awards for filmstrips.

During the year a co-production agreement was signed between France and Canada, an agreement which will apply to short subjects as well as to feature films. Acting on behalf of the External Aid Service of the Department of



*The Playhouse, donated by the Dunn and Beaverbrook Foundation, has proved a boon to performing arts groups of Fredericton, New Brunswick.*



*Since the advent of television, Radio-Canada has presented many outstanding theatrical works. This scene is from Henri de Montherlant's drama La Reine morte.*

External Affairs, the Board assisted in a project which saw 17 cinema vans sent to seven countries of French Africa. The trucks are completely equipped with projectors, generators and screens for open-air showings.

Beyond Canada, National Film Board productions allow millions of people to become better acquainted with this country, its people and its geography, as well as with its economic life and cultural achievements. In 1963-64 record-breaking figures were established in relation to distribution of NFB films outside Canada. There were 25,242 theatrical bookings in various countries, compared with 10,847 the year before. Telecasts were more numerous, at 4,933 for the year, and sales of prints also increased substantially.

These increases resulted, in part, because the number of NFB films available in foreign-language versions is increasing constantly, special efforts have increased the distribution of Canadian travel films in the United States, and distribution agreements have been concluded allowing the Board's films to be seen in many new nations, particularly in French Africa.

In Canada, 394,568 16mm community screenings were recorded by the Board. The total reported audience reached through these showings was in excess of 27,000,000. This type of distribution is based on a nation-wide system of film circuits, film councils and libraries supported by organizations and individuals engaged in community activities. Students in schools and universities comprised about half of the reported audience. Abroad, through libraries in Canadian posts, under exchange agreements and through foreign agencies in more than 70 countries, 235,080 screenings to a total audience of 21,310,000 were reported.

Theatrical booking of NFB films in Canada totalled 6,714 in 1963-64, an increase of 658 over 1962-63. Television screenings totalled 6,970; an average of 19 screenings of NFB productions on television every day of the year.

A considerable audience is reached through the sale of 16mm prints. The Board sold 3,330 prints of its own product in Canada, and 5,207 prints abroad.



*Front Page Challenge, a popular weekly program on the CBC, has introduced many interesting guests to its audience. Shown above are the host and members of his panel: Betty Kennedy, Fred Davis (host), Pierre Berton and, in the foreground, Gordon Sinclair.*

Board filmstrip sales in Canada were in excess of 28,600 prints, and 7,179 filmstrips were sold abroad.

## Art

In addition to bringing the arts of other countries and times to the attention of Canadians, the National Gallery has, during the past year, contributed to the advancement of Canadian art in a variety of ways.

In February 1964, an important exhibition of Canadian painting of the past twenty-five years was shown at the Tate Gallery, London. It was received with great interest by the British public, and proved a striking sequel to the 1938 exhibition of Canadian art at the Tate Gallery when a more general survey of arts and crafts was presented.

During the summer and early autumn Canada was represented at the Biennale in Venice by the paintings, drawings and prints of Harold Town of Toronto, and the sculptures of Elza Mayhew of Victoria. Both won critical acclaim for themselves and maintained Canada's high reputation in the international field.

In Ottawa itself the Second Exhibition of Canadian Sculpture, selected by a distinguished jury headed by Herbert Ferber, internationally-known American sculptor, presented a small but forward-looking display throughout the summer.

The Gallery's first exhibition of Canadian Water Colours, Drawings and Prints, brought in 1,400 entries, of which 60 were selected for inclusion by



*Alexis Smith, a guest on Flashback, is shown with host, Bill Walker.*

W. S. Lieberman of the Museum of Modern Art who acted as a one-man jury. On his recommendation and in view of the extremely high quality of exhibits the Trustees purchased the whole show for the national collection.

Two painters were honoured for their contributions to Canadian art with one-man shows at the National Gallery. In April, Marc-Aurèle Fortin, a contemporary of the Group of Seven, was given a retrospective exhibition of paintings, water colours and drawings representing a lifetime's devotion to the Quebec scene. In October the Gallery honoured the memory of George Pepper with an exhibition of his war paintings in which the collection is particularly rich.

In co-operation with professional organizations, the National Gallery also presented exhibitions of *Historic Architecture of Canada*, *Typography 1964* and the *Massey Medals for Architecture*, and circulated a wide choice of travelling exhibitions throughout Canada.

A landmark in the history of art museums in Canada was the conference of museum directors and curators sponsored by the National Gallery in March, 1964. This resulted in the formation of a new professional organization, the Canadian Art Museum Director's Organization.



*Hélène Baillargeon's TV program Chez Hélène is an entertaining medium for the study of French for pre-school-age children.*

## Radio and Television

Canadian television has grown at a fantastic rate in spite of the vast distances and scattered population of the country. Television households increased from 650,000 in 1954 to 4,321,000 in 1964. Television sets may be found in 90 p.c. of households, while radios are reported in 98 p.c.

In 1958 a fundamental change occurred in the structure of Canadian broadcasting with the creation of the Board of Broadcast Governors and the transfer to it of the regulatory authority which had been held by the CBC since 1936.

The Board is composed of three full-time members appointed for a period of seven years, and 12 part-time members appointed for a period of five years, and reports to Parliament through the Minister of National Revenue. It regulates the establishment and authorization of networks and stations, the activities of the CBC and privately-owned stations alike, and the relationship between them. BBG regulations require television stations to carry in their programs 55 p.c. Canadian content.



*The Chord of Steel, a seven-part drama on the life of Alexander Graham Bell, was a popular presentation on television in 1964. "Mr. Watson—can you hear me?" the inventor asks anxiously.*



*Amusical program which originates in the Maritimes enjoys Canada-wide popularity.*

*Two Canadian comedians, Johnny Wayne and Frank Shuster, won the Silver Rose Award in international competition in 1965 for their portrayals in Show of the Week programs on television.*



**The Canadian Broadcasting Corporation.** The CBC, which over the years has presented programs of all kinds designed to bring various parts of the country and its people together, took a significant step in February 1964. The Corporation held discussions with about 90 of its chief program officers and senior executives from all parts of Canada at a three-day conference at Montebello, P.Q., for the purpose of exploring ways of furthering its aim of helping French- and English-speaking Canadians to understand and learn about each other. The conference may well prove to have been one of the most valuable in the history of the CBC.

In keeping with the traditional role of the CBC in the parallel development of Canada's two major cultures and in the fostering of good relations among all Canadians, a new television series was introduced in the 1964-65

season. Entitled, "French For Love", it was designed to give people a chance to hear conversational French as spoken by French-speaking people the world over.

Two major events in which the Canadian Broadcasting Corporation played a prominent part in 1964 were the Royal Visit to Canada, October 5-13, and the coverage of the Olympic Games from Tokyo, Japan, October 10-25.

The English and French networks of the CBC combined resources and brought to all Canadians the major events of the visit to Canada of Her Majesty Queen Elizabeth II, and HRH Prince Philip. CBC radio and television covered the arrival of the Royal Party at Prince Edward Island, followed by such events as the opening of the Fathers of Confederation Memorial Building at Charlottetown, P.E.I.; the arrival of the Royal Yacht, *Britannia*, at Quebec City, and the visit to the Quebec Legislature; and thence to Ottawa, the scene of departure for Britain.

CBC television provided exclusive Canadian coverage of the 18th Olympiad from Tokyo, Japan. Same-day coverage of the games was made possible by the satellite Syncom III and the time difference between Japan and Canada.

In 1964, a new CBC-TV public affairs program entitled, "This Hour Has Seven Days", was presented. This new hour-long program dealt with subjects on international affairs, politics, science, art, music, medicine, books, social problems, law and sports, and the entire spectrum of magazine journalism. However, the main emphasis of the program was centred on current affairs of the week.

The CBC, in co-operation with the National Gallery of Canada and the Queen's Printer, presented an art appreciation series, "Listening to Pictures" on Trans-Canada Matinee. Because of the great response to this radio series, the CBC rebroadcasted the talks by Dr. Jean Sutherland Boggs, professor of the history of art at Washington University, St. Louis, Missouri.

Another highlight in 1964 was the resumption on November 1 of CBC-FM network service which had begun in 1960 and was curtailed in September, 1962, in connection with an economy program. For an experimental one-year period, no commercials are being carried on the reactivated FM network which comprises CBL-FM Toronto, CBO-FM Ottawa and CBM-FM Montreal. CBU-FM Vancouver started network program service in November by means of high-fidelity tape and disc exchange.

These four English-language stations each contribute programs to the network service which has frequent and extended periods of uninterrupted high-fidelity music, comprising about 80 per cent of the broadcast schedule. In addition, there are news, commentaries, serious talks and other spoken-word programs. CBF-FM Montreal, the CBC's French-language FM station, was also reactivated on November 1 with separate programming from noon to midnight, seven days a week.

The Corporation's continuing interest in international television is expressed through active participation in "Intertel"—an international television federation formed by TV organizations in four major English-speaking countries. Its aim is to produce high-quality television programs for the purpose of promoting a wider knowledge of contemporary world affairs



*Wascana, Saskatchewan, wind ensemble holds a practice session.*

and a better mutual understanding of world problems. Members of "Intertel" are: the Canadian Broadcasting Corporation, Associated Rediffusion Ltd., England, the Australian Broadcasting Commission, the National Educational Television and Radio Centre, and Westinghouse Broadcasting Company, both of the United States. The latest CBC contribution to "Intertel" was a one-hour program, entitled "Three Men", a report on the position of Secretary General of the United Nations held by Trygve Lie, Dag Hammarskjold and U Thant.

The high quality of CBC programming was marked by the sale of programs such as the CBC's exclusive 90-minute TV documentary on mainland China entitled, "700 Million" to the National Educational Television and Radio Centre Inc., U.S., and to the British Broadcasting Corporation, England. This TV documentary was the first to be made in mainland China by a North American crew since the revolution of October, 1949. During 1964 the CBC also sold three episodes from "The Living Sea" series to Hungary.

**The Private Stations.** Canada's 438 private radio and television stations provide more than two and one quarter million hours of programming every year. Many of the newest of the independent television stations broadcast more than 6,000 hours annually and many of the radio stations program every hour of every day of the year.

Of the 438 private stations, 230 are AM stations, 36 FM, 6 shortwave and 166 television, stations.

The privately-owned radio and television stations showed an investment value in 1962 of over \$110,000,000. In the same year these stations had total operating expenses of more than \$96,000,000.

The majority of Canada's privately-owned radio and television stations are members of the Canadian Association of Broadcasters, a non-profit association dedicated to improving broadcasting locally, regionally and nationally.

There are also regional broadcasting associations for the Atlantic area, Central Canada, the Prairie Provinces and British Columbia. In addition, there is l'Association Canadienne de la Radio et de la Télévision de langue Française with a membership of 44 French-language stations from Quebec,

Ontario, the Maritimes and the Prairies. Private stations, through the CAB, are also members of the Inter-American Association of Broadcasters.

One of the most popular public service programs carried by private stations is "Report from Parliament Hill". Recorded in CAB's Ottawa studios, this program permits Members of Parliament of all parties to make five-minute radio reports to their constituents throughout the parliamentary session. When Parliament is not in session, this program carries reports from members of the Parliamentary Press Gallery on events in the nation's capital.

Private radio and TV broadcasters work closely with their local civic and municipal leaders. On the national scene, they work with such groups as the Canadian Centennial Committee, The Canadian Conference on Education, the Canada Council, and the Dominion Drama Festival. The CAB is the major sponsor of the annual Dominion Drama Festival.

Individual private stations have won national and international awards each year for news coverage and public affairs programming. A Canadian company also gives an award to private radio and TV stations which make new technical contributions to the industry. This award, given only when outstanding new technical contributions have been made, has gone to stations in all areas of Canada.

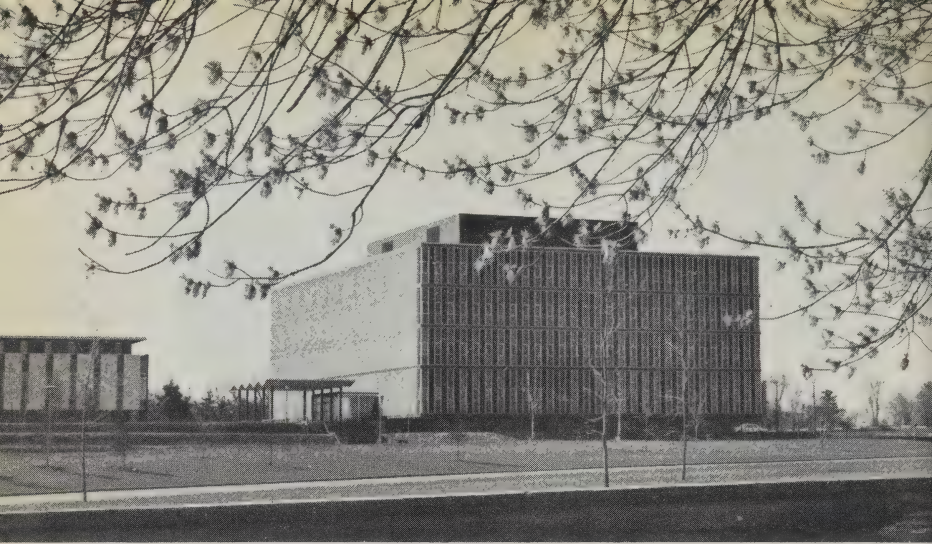
The private sector of the Canadian broadcasting industry has also been interested in expanding broadcasting research. A research project is being contemplated by the CAB at the university level. Private broadcasters were also instrumental in setting up the Radio Sales Bureau and the Television Sales Bureau to produce valid material on the two industries.

The tremendous expansion in radio and television in recent years has provided a stimulus and a challenge to the broadcasting industry. Since 1960, 44 new private radio stations and 109 new private television stations have gone on the air.

**The CTV Television Network Limited.** CTV, which began operations late in 1961, has 11 affiliate stations and 13 satellite outlets from St. John's to Victoria, and reaches 73 p.c. of the population. CTV is a unique network in that it is the only licensed network in the world and is partially owned by its affiliates, rather than vice versa. While it is primarily an entertainment medium, it also produces several shows of comment and discussion. Its 28-hour week is composed of programs that are 64 p.c. Canadian in content.



*Radio-Canada was well equipped to present both commentary and film at the opening of La Place des Arts in Montreal.*



*Library, Carleton University, Ottawa.*

## Libraries

Canadian libraries are organized to serve the general public, through networks of municipal, regional and provincial public library services in each province; students are provided with academic libraries in schools and universities; and special occupational groups are served by government, professional, business and technical libraries.

**The National Library.** The National Library, formally established in 1953, publishes *Canadiana*, a monthly bibliography of books, pamphlets, music and films published in Canada or relating to Canada and including federal and provincial government publications; maintains the National Union Catalogue; and is building an extensive general collection of books with special emphasis on the humanities, music and social sciences.

During the calendar year 1964, *Canadiana* listed 12,625 separate items in library cataloguing form and was used extensively in Canada and abroad.

The National Union Catalogue includes about 5,000,000 entries, listing volumes in over 200 Canadian libraries, and is kept up to date by reports of new accessions. Libraries of all kinds, in Canada and abroad, use this catalogue to locate books for inter-library loan purposes. During 1963-64 more than 23,000 enquiries were received.

The National Library lends its books (other than the reference collection) to libraries across the country for the use of their patrons. The collection now in use includes nearly 350,000 books, microcards and microfilms, but is limited by lack of space and facilities, while housed in temporary quarters. The National Library building, now under construction, is to be completed in the autumn of 1966.

## Creative Writing

An unprecedented sense of enterprise and affluence marked Canada's 1964 book scene, with authors, publishers, booksellers and the reading public all sharing in the excitement and benefits.

Authors, publishers and retailers played a leading part in providing information and opinion relating to what has become known throughout Canada as "The Quiet Revolution" or "The French Canadian Fact", our major concern with the pressing problems of biculturalism.

Important contributions included: a brilliant dialogue between two Canadian women, Solange Chaput-Rolland and Gwethalyn Graham, published simultaneously by French Canadian and English Canadian publishers under the titles *Chers Ennemis* and *Dear Enemies*; a joint study by Frank Scott and Michael Oliver entitled *Quebec States its Case*; and personal statements by Richard Ares (*Justice et Équité pour la Communauté canadienne française*), by Hugh Myers (*The Quebec Revolution*), by Philippe Garique (*L'Option Politique du Canada français*) and a paperback reprint of Mason Wade's classic *The French Canadian Outlook*.

The entire book business in the province of Quebec was *en marche* throughout 1964 and its vitality set an example for the whole country. In April, Le Salon du Livre de Montréal proved to be the most important French-language book event in the world; involving the showing of 14,000 books by 300 publishers in seven countries; 800 magazines from 78 countries; and more than 70,000 visitors. A lively multi-purpose "bulletin du livre au Canada français", official organ of Le Conseil Supérieur du Livre and spokesman for six major literary organizations, was announced.

The university presses at Montreal and Laval displayed increased activity and broadened interests. French Canadian popular publishers greatly increased their output and the number of French-language retail outlets in Quebec and elsewhere in Canada increased notably.

The much coveted Quebec government prizes for literature were awarded to (1) Paul Chamberland for his *Terre Québec*; (2) Réal Benoit for *Quelqu'un pour m'écouter* and (3) Eva Kushner for *Rina Lasnier*. Le Prix du Cercle du Livre de France was won by Georges Cartier for his novel *Le Poisson Pêché*. Le Prix France-Canada was won by Jean-Paul Pinsonneault for his novel *Les Terres Sèches* and Le Prix Du Maurier was awarded jointly to Paul Chamberland for *Terre Québec* and Jemma Tremblay for her collected works.

In English-Canadian publishing the emphasis was on paperbacks, serious non-fiction and books for children. Booksellers continued to display racks of thousands of paperback titles issued by publishers in the U.S.A. and Great Britain, but a significant development in 1964 was a great increase of paperbacks by Canadian authors through Canadian publishers. Notable among these were: Yusouf Karsh's *In Search of Greatness*; Brian Moore's *Judith Hearn*; Stephen Leacock's *Moonbeams from a Larger Lunacy*; Gabrielle Roy's *The Cashier*; George Glazebrook's *Transportation in Canada*; Milton Wilson's *Poetry of the Mid-century*; E. C. Guillet's *Pioneer Days in Upper Canada* and William Mackintosh's *Economic Backgrounds of Dominion-Provincial Relations*.

A greater than usual number of non-fiction titles appeared in 1964, highlighted by *The Palliser Expedition*, by Irene Spry; *Economic Geography of Canada*, by Camu, Weeks and Sametz; *Born to Terror*, an account of the Sons of Freedom Doukhobors, by Simma Holt; *The Road to Confederation*, by Donald Creighton; *The History of the Jews in Canada*, by B. J. Sack and Toronto, *No Mean City*, by Eric Arthur.

Important new biographical titles of the year included: *The Pearson Phenomenon*, by John Beal; *Give My Heart*, the story of Dr. Marion Hilliard, by M. O. Robinson and *The Scotch*, a nostalgic look at boyhood in Ontario, by John Kenneth Galbraith. A genuine touch of Canadiana was seen in *The Stanley Cup Story*, by Henry Roxborough and *Ice Hockey*, by Frank Mahovlich.

Canadian books for young readers reached an all-time high in quality and number of titles, and the 1964 observance of Young Canada's Book Week was a resounding success. The variety of topics covered by the young reader's list is indicated by the following: *Mudlark* (G. Dunham), *Glooscap and his Magic* (K. Hill), *Lukey Paul from Labrador* (A. Leitch), *Lucky Jim's Gold Mine* (T. Baker), *The Canal Builders* (J. Bassett), *Ranch in the Rockies* (G. Mason), *Daredevils of Niagara* (A. O'Brien), *Mickey the Beaver* (K. Wood) and Hugh Maitland's new series of stories for younger teenagers—*Brad Forrest's Hong Kong Adventure*; *Los Angeles Adventure*; *Calgary Adventure* and *Madagascar Adventure*.

Although a number of promising new Canadian novelists were introduced in 1964, the names of familiar favourites headed the fiction list. Notable were: Ralph Allen's *The High White Forest*, David Walker's *Winter of Madness*, Harry Boyle's *A Summer Burning*, Henry Kreisel's *The Betrayal* and Nicholas Monsarrat's *A Fair Day's Work*. A welcome item was the English translation of *Ashini*, by Yves Thériault, 1961 winner of the Governor General's Award for French Canadian fiction.

In the humour list five titles were eminent: *Tales from Barrett's Landing*, by Helen Wilson; *The Fully Processed Cheese*, by Norman Ward; *Author! Author!* by Hugh Garner; *Space Age, Go Home!* by Eric Nicol and *I've Been Around and Around and Around and Around*, by George Bain.

The work of Canadian poets appears mainly in the magazines but a number of notable volumes of poetry were published in 1964, including: *The Colour of the Times* (R. Souster), *The Laughing Rooster* (I. Layton), *Near False Creek Mouth* (E. Birney), *Flowers for Hitler* (L. Cohen), *Within the Zodiac* (P. Gotlieb) and *A Point of Sky* (J. Glassco).

Winners of the 1963 Governor General's Awards for Literature were as follows: English-language non-fiction—J. M. S. Careless, for his biography *Brown of the Globe*; English-language fiction—Hugh Garner for his *Stories*; French-language poetry—Gatien Lapointe, for his *Ode au Saint Laurent*; French-language non-fiction—Gustave Lanctot, for his *Histoire du Canada*. No Awards were made for English poetry or French fiction. The Leacock Memorial Award for humour was won by Harry Boyle's *Homebrew and Patches*, and the University of British Columbia Medal for popular biography went to John M. Gray for his *Lord Selkirk of Red River*.

Winners of 1964 Awards were: English-language non-fiction—Mrs. Phyllis Grosskurth for her biography, *John Addington Symonds*; English fiction—Douglas LePan for *The Deserter*; English-language poetry—Raymond Souster for *The Colour of the Times*; French non-fiction—Rev. Réjean Robidoux for *Roger Martin du Gard et la Religion*; French fiction—Jean-Paul Pinsonneault for *Les Terres Sèches*; French poetry and theatre—Pierre Perrault for his adaptation of *Au Coeur de la Rose*, a play originally written for television.



*Quetico Training Centre, Ontario, is one of many centres in Canada where students study arts and crafts.*

## Cultural Organizations

While the Canada Council has given notable encouragement and leadership to the country's expanding cultural life in recent years, there are many important non-government agencies engaged in the promotion of the arts. The two senior bodies are The Royal Canadian Academy of Arts (1880), and The Royal Society of Canada (1882).

The Canada Foundation and the Canadian Conference of the Arts, both incorporated in 1945, are active nationally and in relation to all the arts. Some of the leading specialized organizations are: Royal Architectural Institute of Canada, Association of Canadian Industrial Designers, Association Canadienne du Théâtre d'Amateurs, Canadian Authors Association, Canadian Ballet Association, Canadian Film Institute, Canadian Group of Painters, Canadian Guild of Potters, Sculptors Society of Canada, Canadian Handicrafts Guild, Société des Écrivains Canadiens, Canadian League of Composers, Canadian Music Centre, Canadian Theatre Centre, Dominion Drama Festival, Les Jeunesses Musicales du Canada, Town Planning Institute of Canada.

A most welcome newcomer in the field is the Canadian Cultural Information Centre, a servicing agency sponsored jointly by the Canada Foundation and the Canada Council.

## New Names on the Map

Every year, new designations appear on the maps of Canada. Some are new names to replace older forms; others are names to designate new landmarks.

Examples are Mount Kennedy and Easterville—the former, to commemorate the life of the late President of the United States; the second, to honour the achievements of a Manitoba Indian chief.

During the first six months of 1964, 1,279 new names appeared in Canada—the majority, 525, in Quebec; and in Saskatchewan, 222. Ontario received 190 new names; New Brunswick, 158; Manitoba, 113; British Columbia, 39; the Northwest Territories, 14; Nova Scotia, 13; and Alberta, five. There were no additions to the nomenclature of Prince Edward Island.



*Peggy's Cove is a fishing village, but it often seems like an artists' colony for it is a favourite resort of painters.*

### Recreation

## Incomparable Scenery and a Host of Sports in Canada

Majestic, snow-capped mountains . . . crystal-clear lakes and rivers . . . rugged frontier lands rich in game and fish—this is Canada, a vacation land which yearly invites millions of visitors to enjoy its incomparable scenery and warm hospitality.

In addition, Canada provides a wealth of special entertainments for resident and tourist alike. These vary from province to province, from season to season. While such large metropolitan centres as Montreal, Toronto, Winnipeg and Vancouver, are noted for their theatrical and musical productions, art galleries and museum exhibitions, thousands of smaller communities have equally fascinating and diverse programs for the entertainment of their peoples.

To such memorable occasions as the Canadian Tulip Festival, Ottawa, the International Freedom Festival, Windsor-Detroit, the Northern Manitoba Trappers' Festival and the Laurentian Snow Festival, Sainte Agathe, may be added a multiplicity of similar events—blossom festivals, snow festivals, music festivals, fisheries festivals, potato festivals, folksong festivals, festivals of the arts, festivals of the sea, trout festivals, lobster festivals, dramatic arts festivals . . .

In addition to the Diamond Jubilee celebrations which are marking this year the entry of Alberta and Saskatchewan into Confederation, a number of Canadian communities are observing their natal days: Drummondville, Quebec, is observing its 150th anniversary; Dalhousie, New Brunswick, its Diamond Jubilee; and Newcastle, New Brunswick, its bicentenary.

The unlikely combination of art and sport flourish in Canada in the winter months. For many it is a season of carnivals, figure skating championships, ice follies, curling bonspiels, hockey and ski tournaments; for others a season of symphony concerts, ballet performances, opera productions and cultural exhibits.

Spring brings a change of pace with its seasonal activities, but it is summer which ushers in a host of new engagements—harness and horse racing, ocean and lake regattas, a variety of games, flower shows, provincial exhibitions, summer theatre presentations, swimming championships, etc. Summer cottages and tourist hotels re-open—and sightseeing along the highways and byways becomes increasingly popular. In the glorious days of



*The Canadian National Exhibition, one of the largest annual fairs in the world, attracts thousands of visitors. It is a show window on Canada and provides many types of entertainment.*



*The chuckwagon race is a popular event at the Calgary Exhibition and Stampede.*



*In the solitude of the great forests and lakes of Canada many vacationers find solace and recreation.*

summer vacations, visitor and resident alike enjoy anew the panorama which is Canada's heritage.

Among the interesting attractions in 1965 may be mentioned the Gaelic Mod, St. Ann's, Cape Breton Island; Old Home Week, Charlottetown, Prince Edward Island; the Retreat Ceremony, Old Fort Henry, Ontario; the Canadian Old Time Fiddlers' Contest, Shelburne, Ontario; the Calgary Exhibition and Stampede, and Banff Indian Days, Alberta; the Annual Penticton Peach Festival, and Pacific National Exhibition, Vancouver, British Columbia; the "Trail of '98" carnival, Whitehorse, and Discovery Day, Dawson, Yukon.

Many summer activities continue into early fall. Then other seasonal presentations begin, including a host of fall fairs and exhibitions.

Soon it is winter again—and the merry round of entertainment assumes a new, but traditional, guise.

**Summer Study.** Down the years, thousands of vacationists—painters, sculptors, writers and choreographers—have found incomparable inspiration in the art colonies of Canada. Summer schools of art are sponsored by a number of universities and schools throughout the land. Many require no standard academic standing as their chief concern is the development of the artist.

Instruction is available in the graphic arts and in music, writing, sculpture and ballet at the Centre d'Art, the focal point of the cultural activities of St. Adele, Quebec. Courses in wood turning, weaving, jewellery making, enamelling, leatherwork, basketry, rug hooking, textile painting, lamp shade painting and various crafts for children are provided at Fundy National Park, Alma,



*What could be more delightful on a hot summer day than a lobster party on a Maritime beach?*



*The 30-passenger sky tram at Jasper, Alberta, offers visitors a magnificent view of the mountains.*

New Brunswick. Nearly all are based on projects which can be completed in one day by an amateur craftsman, the classes being described as "popular" rather than "academic".

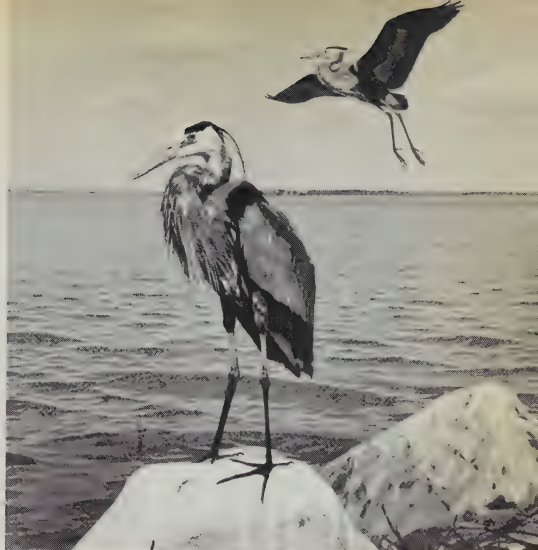
Farther to the west, in the beautiful setting of the Rocky Mountains, the Banff School of Fine Arts, Banff, Alberta, attracts a large body of students for winter or summer sessions of study. It gives a wide variety of courses—theatre arts (acting, stagecraft, directing, speech, play writing), musical theatre, painting, ballet, figure skating, music (piano, voice, opera production, strings, theory, choral and instrumental workshops), writing (play writing, writing for radio and television, short story writing, journalism and literature), weaving, ceramics, photography, oral French; children's classes in painting, ballet, piano, singing, French, and drama. The school accepts students from any country. Many accept the invitation; registration each year is approximately 1,200.

Those interested in summer courses may find additional information in "Summer Courses in Canada", a publication of the Canadian Government Travel Bureau, Ottawa, or in "Facilities for Study in the Arts in Canada", which is published by the Canadian Cultural Information Centre, 56 Sparks Street, Ottawa 4, Canada.

**Parks and Wildlife.** In 1964 more than nine million visitors were attracted to the National Parks of Canada. While many came to enjoy the scenery, increasing numbers are photographic hunters. They find wildlife a major attraction in these areas.

Canada has the second largest number of National Parks and National Historic Parks in the world. The system dates from 1885 when a ten-square-mile reserve was established around the mineral hot springs of Sulphur Mountain, Banff, Alberta. In the following year two areas in British Columbia were set aside as parks.

*Excellent exhibits in many Canadian museums afford visitors an opportunity to study wildlife. These, from the Museum of Natural History, Regina, show two blue herons*



*... coyotes*



*... rare whooping cranes.*



*A member of the Prince Albert Ski Club flashes down a slope.*

While the National Parks preserve natural features, National Historic Parks and Sites preserve and identify the places important in the history of Canada. There are 591 historic monuments or plaques commemorating important personages or events and 12 major National Historic Sites. In addition there are 10 other National Historic Sites owned by the National Parks Branch and leased to other organizations for maintenance and operation.

Provincial parks have also been established. Many are wilderness areas set aside to retain the countryside in its natural state. Newfoundland has 78.5 square miles of provincial park land; Prince Edward Island, 18 areas totalling 250 acres; Nova Scotia, nine camping and picnic sites, 24 picnic parks, as well as 32 roadside table sites; New Brunswick, 15 regional park sites ranging in size from 25 to 200 acres, 17 picnic campsites, and 23 roadside picnic sites; Quebec has established six provincial parks and 16 fish and game reserves; Ontario has 86 provincial parks totalling 5,500 square miles; Manitoba, six provincial parks with a total of 2,742 square miles; Saskatchewan, 14 provincial parks with a total area of 2,284 square miles; Alberta, 42 provincial parks with an approximate area of 140 square miles; British Columbia, 216 provincial parks with an area of 9,981 square miles.



*The Cabot Trail which winds around Cape Breton's north country provides rare vistas of sea and forest.*

Some parks are reserved solely for recreational purposes. In others, visitor and resident live in close communion with the natural wildlife of the area.

A series of "nature centres" will soon add to the enjoyment of visitors to Canada's National Parks. The first such centre will be built this year in Point Pelee National Park, Ontario. In these centres, nothing will be displayed indoors that can be seen outside in its natural setting.

Some exhibits will show how natural forces shaped the physical features of the park—the cliffs and beaches, lakes and mountains. Others will explain why certain plants and animals are found in that particular locality; how they exist in natural balance.

As Point Pelee National Park in Lake Erie is on the main flyway of thousands of migrating birds and butterflies, and is the habitat of flora and fauna seldom found elsewhere in Canada, it has been a favourite haunt of naturalists. With the establishment of a "nature centre" it will doubtless attract a still greater number of camera fans and earnest students of wildlife.



*The annual Swiftsure Race, Victoria, British Columbia, is an exciting event for participants and spectators alike.*

## Sports

Canada's salubrious climate offers a rich variety of sports during every season of the year. The provinces have adopted practically all the popular games of other lands and have also fostered and developed a few distinctly their own. Ice hockey has been adopted eagerly by other lands, and lacrosse is growing steadily in popularity.

Water sports are particularly popular in the summer months. On the beaches of the Atlantic and Pacific, on the shores of the Great Lakes, and on countless inland waters, Canadians fish, swim, sail and ski. The scope and opportunity for all types of water-sports have increased in recent years as thousands of miles of new highways have been constructed and many new

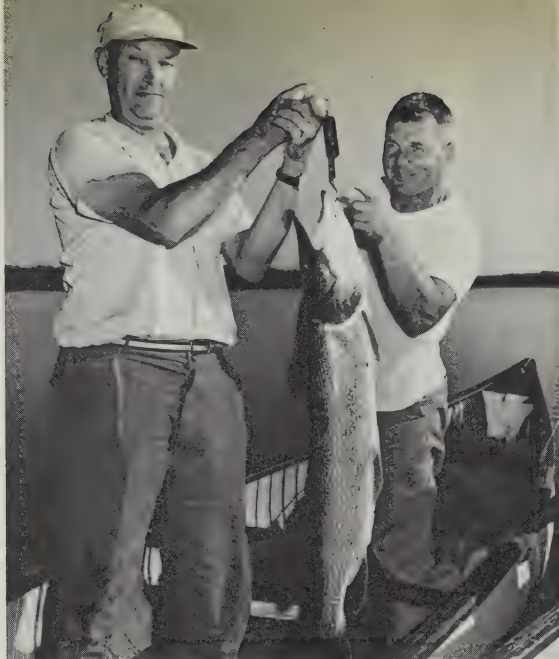
*In the beautiful Muskoka Lake district of Ontario, a child gingerly tests her ski equipment.*



*George Hungerford, Vancouver, B.C., and Roger Jackson, Toronto, Ontario, won Canada a gold medal in Olympic events at Tokyo in 1964.*

*Golf is as popular in Canada as in other countries. The first international golf match was staged in Toronto in 1898. A number of Canadians have since won championships in international events.*





*A visitor proudly displays the 22-pound fish he caught in the Churchill River, Saskatchewan.*



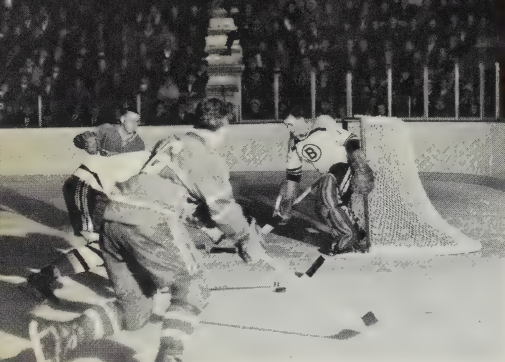
*Even winter does not deter the ardent angler from engaging in his favourite sport.*



*Those who are far from ocean waters or inland lakes find recreation in community pools.*

*Calgary Stampeders await their turn.*





*Excitement reaches fever pitch in Canada when professional hockey teams compete. Here, Boston Bruins engage the Montreal Canadiens. Coveted award is the sterling silver Stanley Cup, the gift of a former Governor General of Canada, The Baron Stanley of Preston.*

*Lacrosse is a popular sport in many areas of Canada. The solid gold Mann Cup is emblematic of the senior lacrosse championship; the silver Minto Cup, of the junior championship.*



resort areas opened to the public. While the more gregarious prefer the beautiful marinas which are equipped to handle a variety of craft, others choose quiet campsites on remote lakes and rivers.

For those who like sports of a professional or amateur character, Canada offers a wide range for participants or spectators. Since the Second World War professional football has enjoyed a meteoric rise and the Grey Cup games have acquired all the trappings of festival performances. On an amateur scale there are intermediate and junior leagues and the game thrives in high schools and colleges.

Soccer is also well organized, the calibre of play and the popularity of the sport having been enhanced in recent years by European immigrants adept at the game. English rugby also has its scattered groups of enthusiasts, especially in the Atlantic provinces and in British Columbia. Cricket and lawn bowling, introduced into Canada by Britons, have also become popular in many Canadian centres.

In summer, baseball is the greatest spectator sport and is played throughout Canada at all levels of competition. Lacrosse also has its circles of enthusiasts.



*Lake Louise, a gem of the Rockies, was named in honour of Princess Louise, wife of the Marquis of Lorne, a Governor General of Canada during the nineteenth century.*

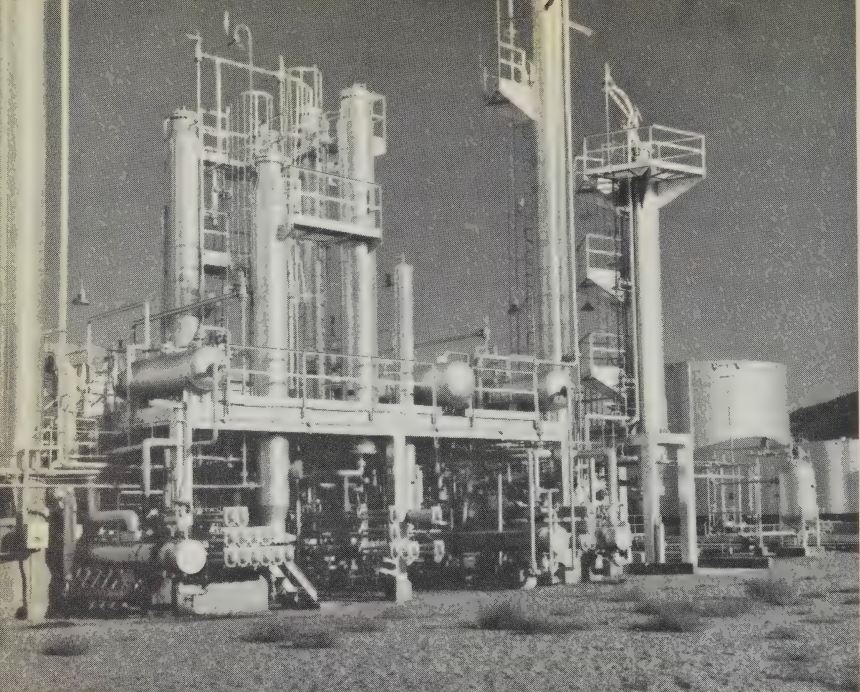
Games of individual skill such as rifle shooting, archery, track and field sports, and marathon running, have eager competitors who engage in city and provincial meets. Golf, too, has spread at an amazing rate in Canada and can be numbered as one of the most popular participant sports. Lawn tennis vies with golf for summer popularity and thousands of players enjoy the game on privately-owned courts or on club properties.

Swimming, boating, and sailing also are popular. Scores of regattas are held during the summer months, and an annual marathon swim is a part of the sports background of the Canadian National Exhibition in Toronto. The lakes and coastal waters also encourage sailing in all rigs and classes.

The advent of winter changes the sports patterns of Canadians but does not dampen the enthusiasm of participants and spectators. Ice hockey is the most popular game during the cold weather. All season long, rinks are jammed with devotees of the game. Well-appointed curling rinks also abound in countless cities and hamlets throughout the land; skiers throng the slopes, and figure skaters practise enthusiastically.

For those who prefer indoor sports during winter, alley bowling, basketball, badminton, boxing and similar activities enliven the longer evenings.

Residents and visitors of few countries have such wide opportunities for healthful activities at all seasons of the year. That Canadians appreciate this heritage may be noted by the thousands who appear on the playing fields of the nation, or in the spectator stands of countless arenas.



*The Royalite Refinery at Kamloops now uses B.C. crude oil almost exclusively. It handles 65,000 barrels per day.*

### Economic Goals for Canada

## Prospects for 1970 Envisaged; Expanded Production Essential

Canada's economic performance in the post-war period has been remarkable in many respects. Measured in broad terms, the volume of all production approximately doubled between 1946 and 1963. In the same period, real per capita output—that is, after adjustment for price changes—rose by about 30 p.c. Output per person employed, a measurement of productivity, advanced by close to 50 p.c. and output per man-hour increased by almost 70 p.c.

As in many other countries, however, economic growth in Canada has been uneven. Periodic surges of rapid growth and change have been interrupted by extended periods of slowdown. Looking back over the post-war period as a whole, it appears that the Canadian economy has passed through two distinctly different phases of performance and has entered a third.

The first of these phases, stretching from the early post-war years to the early 1950's, was marked by almost consistently high employment and well sustained increases in productivity and total growth. At the same time, this period was marked by special and recurrent price and cost pressures and strains in the balance of payments.

Subsequently, during the 1950's, the situation changed. The economy lost momentum. This was reflected in higher unemployment, slow gains in

productivity and total output, and a loss of strength in the balance of payments. More recently, since 1961, the economy appears to have entered a third phase in which unemployment has been significantly reduced, productivity has been improved, balance of payments' strains have been eased, and reasonable price and cost stability has been largely maintained.

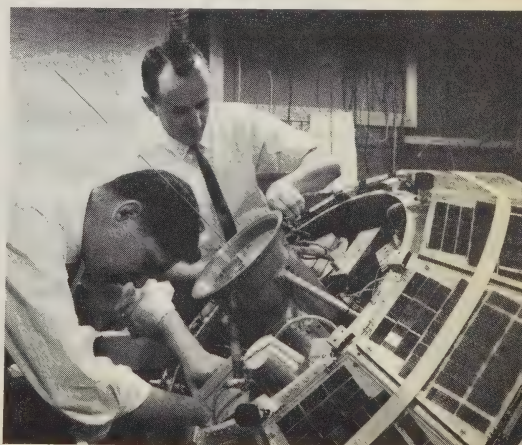
### *Council Created in 1963*

In 1963, amid widespread concern about maintaining and improving high levels of economic performance, the Economic Council of Canada was created by an Act of Parliament. The 28-member Council, which has its own professional staff for economic research and analysis, is a means by which representative leaders from various areas of Canada's economic life—including industry, labour, agriculture, finance and commerce—can together bring to bear their direct knowledge and practical experience on the basic economic problems and policies of the country.

In its terms of reference, the Council is asked to study and advise how Canada can achieve its basic economic and social goals over the medium and longer term future. These goals, which are now widely accepted in all modern states, are full employment, a high rate of economic growth, reasonable stability of prices, a viable balance of payments, and an equitable distribution of rising incomes. The real difficulty, of course, is how to accomplish all these goals simultaneously and consistently. The task of achieving these objectives over the period to 1970 was examined by the Council in its first Annual Review, published early in 1965.

The report said that the potential output of the Canadian economy in 1970 will be determined essentially by the size and structure of the labour force, the extent to which the labour force is employed, and the productiveness of those employed. These factors, in turn, depend on many other complex matters such as the age composition of the population, immigration, the education and skills of labour and management, the mobility of manpower and other resources in adjusting to new opportunities for more productive employment, the volume of new investment, technology and natural resources, the framework of economic policies, and international economic conditions.

*The success of Canada's space satellite, Alouette, encouraged scientists to plan further conquests of space. A refined version of the first satellite may be launched in 1965.*





*The new RCA Victor Canadian-designed fixed antenna for the Nimbus weather satellite has no moving parts and is designed for unattended operation. It tracks the satellite electronically.*



*Canada's seven million dollar floating laboratory, the scientific ship, Hudson, completed its first major trials in April 1965. It took continuous soundings to provide a more accurate guide to the shape of the ocean floor and the mountain ridge in the centre of the Atlantic.*



*The long daylight hours of summer ensure good crops even in the North. This photograph was taken at the Experimental Farm, Mile 1019, on the Alaska Highway.*

### *Growth of Labour Force*

The most striking single feature of Canada's situation is the tremendous swelling of its labour force. The rate of increase is expected to be several times that of most European countries and well over 50 p.c. higher than that in prospect for the United States. Moreover, the rate of increase in Canada is expected to gain speed during the last half of this decade and continue well into the 1970's. Numerically, the growth in the labour force is expected to exceed one million persons in the 1965-70 period. This rate of increase would be one third higher than in the preceding five years.

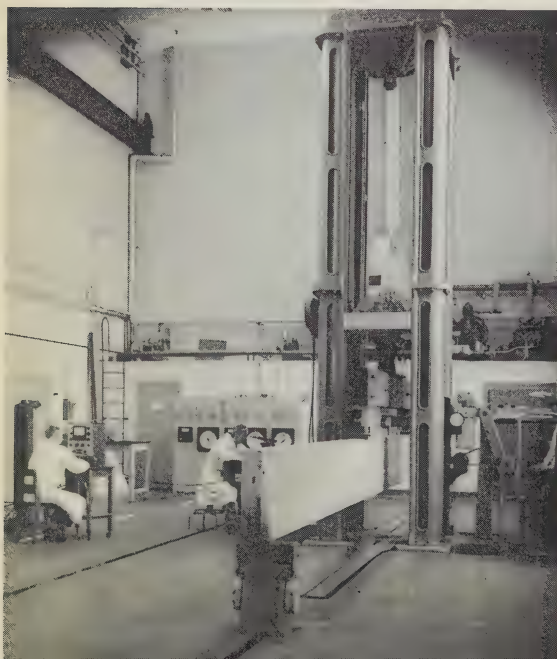
Even more dramatic are the indicated changes in the make-up of the labour force. The impact of the early post-war "baby boom" on the labour force has been modified and delayed as young people remained longer in school. However, these people now are emerging from schools and universities and seeking jobs. Thus, the number of people in the 20-24 age group in the labour force is expected to increase by 33 p.c. from 1965 to 1970. Whereas the male labour force in this age group increased by only 25,000 in the decade of the 1950's; in the 1960's it will increase by 270,000—more than 10 times as much.

This tremendous growth in the labour force must be considered in the light of the full-employment goal. In no country does this goal mean that everyone in the labour force must be employed; there is always some voluntary unemployment as well as some that is unavoidable as workers move from one job to another. The Council has concluded that three p.c. unemployment as an average annual rate would be a practical, realistic objective to be aimed at, over the balance of the 1960's, although it stresses that im-



*Metallurgical research is an important activity in the Department of Mines and Technical Surveys.*

*This view of Canadian Pacific's Merchandise Services new terminal in Winnipeg shows parcels coming up at left to revolving steel sorting ring. From this point they go down other chutes to any of 51 bins, being handled by tow-vveyor trucks to proper exit door.*



*A large, glued, laminated beam is tested in the Forest Products Research Laboratory. Such investigations lead to the development of better design methods and laminating techniques.*



*A Halifax, Nova Scotia, shopping centre provides a variety of retail outlets.*

proved manpower policies—including better labour mobility and higher levels of education and skills—would make it possible to aim at a higher employment potential over the longer term. This three p.c. rate is approximately the same as achieved by Canada between 1946 and 1953. It compares with 4.7 p.c. unemployment in Canada in 1964.

In the face of the labour force increase, this goal will require that civilian employment in Canada increase from 6,364,000 in 1963 to 7,883,000 in 1970. This is a net addition of 1,500,000 jobs in seven years—approximately the same gain in total employment that occurred in Canada over the previous 14 years.

The Council said that, considering the slack which still existed in the Canadian economy, as well as the dramatic increase foreseen in the labour force, it was essential to have a large and sustained growth in total effective demand if high employment is to be achieved and maintained. An appropriate combination of strong expansionary measures and policies would therefore be required to generate adequate levels of demand both at home and in Canada's export markets.

The aim of swiftly-rising employment would not be enough, however. There also must be strong emphasis on increased efficiency—on sustained advances in productivity. Productivity gains are the essence of economic growth and are the real source of improvements in average living standards. The Council said that achievement of potential productivity in Canada would require an advance in output per man-hour of 3 p.c. a year and in output per person employed of 2.4 p.c. a year throughout the period 1963 to 1970. This does not imply any radical departure from Canada's actual over-all productivity in the post-war period as a whole. However, such gains would be well above those of the past seven years.

In terms of a goal for total economic output, the Council called for increases averaging 5.5 p.c. a year in real terms—that is, in terms of volume, after adjustment for price changes. This would be a rapid and vigorous rate of



*A workman wires racks in the new Canadian National Telecommunications building, Whitehorse, Yukon.*

growth. It appears high in relation to Canada's historical experience, and high also in relation to the growth objectives and performances of many other industrially-advanced countries. However, the Council said it is not high in relation to Canada's prospective labour force growth.

Such advances cannot be expected equally in all sectors of the economy. The non-agricultural, goods-producing industries will have to provide the bulk of the productivity improvement required to attain potential output. At the same time, as technological advance and automation proceed, about 75 p.c. of the required new job opportunities will have to be developed in the service industries, the Council estimated. In gross terms, the achievement of an average growth rate of 5.5 p.c. a year would amount to an increase of approximately 50 p.c. in total real output from 1963 to 1970, along with an increase of over 20 p.c. in real per capita income.

Such economic growth necessarily implies the expansion of some activities and the withering of others, the emergence of new products and the extinction of others, growing requirements for some skills and declines for others, the development of new knowledge and better techniques and the obsolescence and upsetting of traditional and established know-how and methods. Moreover, the swifter the pace of growth, the swifter and more uneven will be these processes of change. Conversely, where there is little or no change there will be little or no growth.

When sudden, severe and inequitable burdens—both economic and social—fall on individual workers and firms, and on particular communities, it is

natural to expect strong pressures aimed at slowing down, or even halting, the processes of change. Governments are urged, and tempted, to subsidize and support declining and relatively less efficient industries; employers are tempted to seek increased shelter behind trade restrictions or in the form of restrictive trade practices; and labour unions are tempted to cling to old working rules. Obviously, the Council believes, both change and growth will be curtailed if such defensive and negative approaches prevail.

To facilitate smooth adjustment to rapid technological advances and economic change, the Council suggested the prompt adoption of an effective labour market policy. It also urged high priority in the Canadian economic system for general education and training.

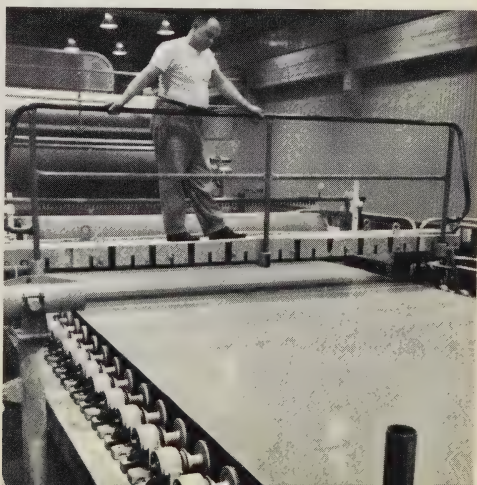
### *Educational Costs Increase*

The Council said that a growing body of economic analysis indicates that general education, research and the advance of knowledge have been a substantial factor in the spectacular economic growth which has occurred in the United States and in other leading industrial countries in this century. In Canada, educational expenditures already are the largest single item in government budgets and are expected to grow more rapidly than other forms of government spending in the rest of this decade. Main reasons for these heavier outlays have been population growth and the tendency for young people to spend longer periods in school. The numbers attending universities and colleges in Canada doubled between 1956 and 1963 and will more than double again before 1970. There also will be a rapid increase in the numbers moving from high school into vocational and technological education.

However, there still are significant gaps in this field in Canada. By interviewing business executives, the Council found that a considerable number of companies are experiencing a scarcity of managerial, technical and scientific personnel. Many firms expect this problem to become more acute in future.

As a geographical neighbour and industrial competitor of the United States, and as an exporter of almost half the goods it produces, Canada has an especially urgent need to maintain adequate levels of business and technical

*A workman, standing at the wet end of a fine paper machine, keeps an eye on operations.*





*Construction was big business in Canada in 1964. It accounted for more than seven billion dollars worth of new business.*

skills. However, Canada now lags in this important field, the Council found. In relative terms, in 1961 Canada had about 40 p.c. fewer scientists and engineers than the United States had.

### *Immigration "Brain Gain"*

In the past, Canada has been able to rely on immigration to fill many gaps in its inventory of skills. Despite emigration of many Canadian professional and skilled workers to the United States, Canada has had a net "brain gain" through migration. Between 1953 and 1963, more than 80,000 professional and highly skilled technical workers entered Canada from outside North America. Immigration has supplied about 25 p.c. of all the engineers and physical scientists now working in Canada, along with 33 p.c. of the architects, 20 p.c. of the physicians and surgeons and 20 p.c. of the computer programmers. However, the Council said it is far from certain that this pattern of a net "brain gain" can be maintained in the years ahead; the United States market will continue to be relatively attractive for highly-skilled and professional workers, and the new and rapidly rising demands for such workers in Europe and elsewhere will make it increasingly difficult for Canada to continue to draw upon these sources on the same scale as in the past.

The Council said that Canada should increase its efforts to attract skilled workers from abroad and retain the ones it already has, but in the longer run a much larger part of the solution must be found in educating and training more young people in the skills needed by a modern economy.

Dealing with the demand side of the economy, the Council noted that for almost four decades, slightly more than two thirds of total Canadian output has been taken up by the consumer sector. Under conditions of potential

output, this consumer spending could be expected to increase between 1963 and 1970 by about 5 p.c. annually. Other large increases would occur in housing and business investment as the economy moves towards potential output. One of the main factors in the anticipated increase of 6.3 p.c. a year in housing outlays is net family formation. This has averaged about 60,000 a year in recent times but is expected to be almost twice as high by the end of the decade. Business investment would be likely to show the greatest percentage increase, an average of 10 p.c. annually.

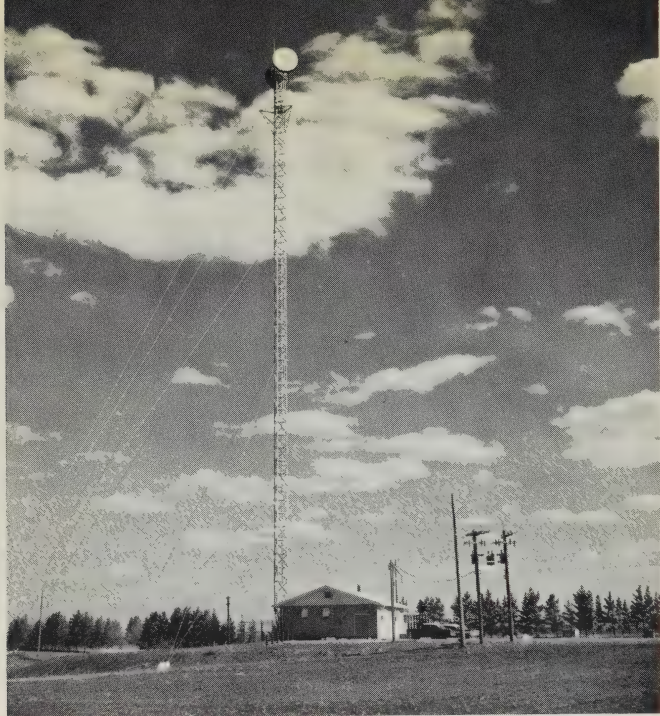
### *Exports Must Rise*

A large rise in Canadian exports is necessary—not only as a basis for rapidly expanding production in Canada, but also to finance swiftly-rising imports and avoid growth-inhibiting strains in the balance of payments. In the light of its calculations and assumptions about trends in world markets, the Council estimated that Canada's export potential for all products by 1970 would be close to 45 p.c. above the volume attained in 1963, or an average annual gain of 5.3 p.c.

In terms of 1963 dollars, this potential would imply a rise in export volume from \$6,800,000,000 in 1963 to \$9,800,000,000 in 1970. The Council said that

*Mahone Bay, Nova Scotia, has long been noted for the quality of its ship-building. The value of manufacturing production in the province has increased two and a half times in the last two decades, and in 1964 approximated \$500 million.*





*This microwave relay installation is at Nutana, Saskatchewan.*

within these broad figures, exports of manufactured goods should show increases averaging at least 10 p.c. a year. Such exports, though still a relatively small proportion of Canada's total shipments abroad, increased by 21 p.c. in the 1960-63 period, after showing little increase for many years.

For imports, the Council assumed an average growth of 6.5 p.c. annually in volume, which in terms of 1963 prices would represent a level of \$10,200,000,000 by 1970. Thus, Canada would move from a commodity trade surplus to a small deficit. Added to this would be the persistent Canadian deficit on international trade in services—such things as travel expenditures, investment income payments, and a whole range of business services.

On the basis of past relationships, 1970 could bring a total current account deficit of \$1,500,000,000 to \$2,000,000,000. The preliminary estimate of this deficit for 1964 was \$453,000,000, continuing a steady decline from much higher levels in the late 1950's. While the increase to 1970 would be great in terms of volume, the Council noted that the projected deficit would be much lower in relation to domestic investment and total output than was the case under comparable past conditions of rapid growth. Nevertheless, such deficit was regarded by the Council as inappropriate as a standard of performance for the Canadian economy on a long-term, sustainable basis. It called for policies—consistent with the other basic economic objectives—to achieve a more competitive economy, and hence a considerably lower current account deficit.

Summing up, the report said: "The potential Canadian economy we visualize for 1970 is a high-standard-of-living and high-employment economy, and it must therefore be a high-education economy, a high-resource-mobility economy, a high-research economy, a high-investment economy, a high-innovation economy, and a highly competitive economy."

# A Canadian Chronology, 1964

## January.

1. New electoral Act comes into effect in Quebec. Minimum age for voting in provincial elections is reduced to 18.
7. Hearings of Newfoundland and Quebec divorce petitions begun by newly-appointed Senate Divorce Commissioner.
8. Announcement made of federal centennial grants of \$2,500,000 to each of eight provinces for construction of cultural centres similar to those under construction in Charlottetown and Quebec City.
13. Canadian and United States negotiators reach agreement on Columbia River hydro and flood-control project.
15. Prime Minister Pearson makes the first official visit of a Canadian Prime Minister to France.
17. Official opening of the Winnipeg International Airport terminal building.
20. The first federal-provincial ministerial conference to discuss Canadian fisheries opens in Ottawa.
22. Exchange of Notes to implement the Columbia River Treaty signed by Canada and the United States on January 17, 1961.
24. Canada Hall to which the Canadian Government contributed under the Commonwealth Caribbean Assistance Program officially opens at University of West Indies, Trinidad.
29. Official opening of Winter Olympic Games, Innsbruck, Austria, at which gold medal for four-man bobsled competition is won by Canadian team headed by Vic Emery, Montreal. Bronze medals for pairs figure skating, and for ladies' singles won by Debbi Wilkes and Guy Revell, and by Petra Burka, respectively.
30. Canada announces diplomatic recognition of Mongolia.

## February.

10. Opening of first Canadian toy fair held in England. It proved an outstanding success.
13. Federal approval given to Master Plan for 1967 World Exhibition. Tanganyika invites Canada to undertake a resources survey.
14. New oceanographic research vessel *Hudson* commissioned in Halifax.
18. Second session of 26th Parliament opens. Confederation Square site of Centre for the Performing Arts, Ottawa, approved.
23. Canada announces recognition of new government of Zanzibar.
28. Toronto International Airport terminal building officially opened.

## March.

1. Four streets in Woensdrecht, the Netherlands, named after Canadian regiments—the Fort Garry Horse, the Toronto Scottish, the Queen's Own Cameron Highlanders and the Royal Hamilton Light Infantry. Construction begun on schools and warehouses on several West Indies Islands as part of Canada-West Indies Aid Program.

3. Change of name from Trans-Canada Air Lines to Air Canada approved by Parliament.
13. Federal Government approves a Canadian contribution to an international force in Cyprus.
16. Finance Minister Gordon presents Federal budget.
19. Lyall Dagg's B.C. rink wins international curling championship at Calgary.
20. Winners of Governor General's Literary Awards for 1963 announced: (English fiction) Hugh Garner; (English non-fiction) J. M. S. Careless; (French poetry) Gatien Lapointe; (French non-fiction) Gustave Lanctot.
26. Plans to integrate the Army, Navy and Air Force into a single service announced by Defence Minister Hellyer.
30. Tidal wave following Alaska earthquake strikes Pacific coast communities.
31. Federal-Provincial Conference opens in Quebec City. Major items of discussion were: proposed Canada Pension Plan; tax equalization; and shared-cost programs.

#### April.

1. Responsibility for Alaska Highway is transferred from Department of National Defence to Department of Public Works.  
Announcement is made that numbered social insurance cards are to be issued to Canadians.
- 6-25. Canada's Stratford Festival performances given in Chichester, England, in celebration of 400th anniversary of Shakespeare's birth.
17. Major copper-zinc-silver discovery near Timmins announced by Texas Gulf Sulphur Company.
22. Election in Saskatchewan. CCF defeated by Liberals after 20 years in office.
24. Report of Royal Commission on Banking and Finance released.
25. Toronto Maple Leafs win Stanley Cup for third consecutive year.
28. V. V. Tarasov, Ottawa correspondent for *Izvestia*, expelled from Canada.
29. Wage regulations establishing province-wide minimum of one dollar an hour, effective June 29, announced by Ontario Government.
30. Canada-U.S. joint Cabinet committee on trade and economic affairs commences meetings in Ottawa.

#### May.

- 8-15. Commonwealth Prime Ministers meet in London.
11. CP-CN telecommunications microwave network, extending from Montreal to Vancouver and linking up with other facilities in Canada and the Commonwealth communications system, officially opened.
13. Quebec's Education Bill 60 setting up a Department of Education proclaimed in effect.
14. Establishment of Department of University Affairs, Ontario, comes into effect.
21. Federal Cabinet approves proposed national flag design: three red maple leaves on white background flanked by vertical blue bars.
31. First resident correspondent for Canadian Press in U.S.S.R. arrives in Moscow.

## June.

5. Columbia River Treaty approved by Commons.
7. Canadian Conference on the Family proposed by Governor General and Mme Vanier opens in Ottawa. The Vanier Institute on the Family is established to continue study of subject.
8. Chancellor Erhard of West Germany arrives in Canada for discussions with the Prime Minister.
9. Death in London of Lord Beaverbrook.
11. Three-year trade agreement signed by Canada and Hungary.
15. Commons begins debate on design of new national flag.
18. Act authorizing appointment of an additional judge of the Exchequer Court to hear divorce cases presented to the House receives Royal Assent.

## July.

7. Minister of Citizenship and Immigration announces intensified community development program to supplement present Government assistance to Indians.
11. Official opening of dock project, Kingston, St. Vincent, constructed with Canadian assistance under the Canada-West Indies Aid Program.
16. Bill extending Canada's fishing limits to 12 miles given Royal Assent.
21. Announcement of extension of term of office of Governor General Vanier.
24. First reporter from Communist China takes up residence in Canada.
28. The Canada Student Loans Act guaranteeing interest-free bank loans to students receives Royal Assent.
29. Canadian aid to Malaysia under Colombo Plan increased by \$4,500,000.

## August.

1. New council of consumers to advise the Government on all matters relating to the interests of the Canadian consumer announced by Health Minister.  
Monument to peace in the International Peace Garden on the Manitoba-North Dakota border dedicated.
3. Provincial premiers meet at Jasper, Alberta, to discuss mutual problems.
11. Mr. Justice Kelly appointed a one-man Royal Commission to investigate stock-market activities related to Windfall Oils and Mines, Ltd., and other stocks with claims in the Timmins area.
20. Official opening of Roosevelt Campobello International Park on Campobello Island, N.B.  
Announcement of plans to construct a one million kw. nuclear power station at Fairport, 20 miles east of Toronto.
21. Opening in Ottawa of Third Commonwealth Education Conference.
- 21-24. Representatives of 18 nations meet in Washington and agree on machinery for sharing ownership and management of U.S. proposed international communications satellite. The \$200 million public-private investment would be put under the over-all policy direction of a 12-member international committee. Voting would be proportional to ownership. Initial quotas approved: Canada, 3¾%.

29. Great Slave Lake Railway crosses the 60th parallel into the Northwest Territories.
31. Opening in Charlottetown of Federal-Provincial Conference and re-enactment, in commemoration, of conference of 1864.

### September.

- 4-5. Canada-Japan ministerial committee met in Tokyo to discuss trade. Canadian and Japanese foreign ministers sign agreement providing that non-business visitors staying less than three months in either country would not need visas.
9. Province of British Columbia loaned province of Quebec 100 million dollars, the first loan made by one province to another. Federal Government announces a 21 million dollar Canadian Pavilion for Expo '67.
14. Tenth annual assembly of NATO opens in Ottawa.

### October.

1. Detailed mapping of Canada on a scale of four miles to the inch completed after 19 years of work by Department of Mines and Technical Surveys and the Army Survey Establishment.
5. Arrival in Canada of H.M. Queen Elizabeth and H.R.H. the Duke of Edinburgh to take part in engagements celebrating the centenary of the first meeting of the Fathers of Confederation. The Queen officially opens the Fathers of Confederation Memorial Centre, Charlottetown, P.E.I.
6. Rocky Mountain peak named Mount Louis St. Laurent in honour of a former Prime Minister.
12. Prime Minister Pearson announces plans to build the Queen Elizabeth II Observatory at the top of Mount Kobau, near Osoyoos, British Columbia, to commemorate the Queen's 1964 visit to Canada.
13. Federal Government and provincial attorneys general agree on formula for bringing B.N.A. Act under complete Canadian control.
14. Federal-Provincial Constitutional Conference opens in Ottawa.
17. Trent University officially opened in Peterborough, Ontario.
19. Brock University, St. Catharines, Ontario, officially opened. First Federal-Provincial Conference on Mental Retardation opens in Ottawa.
23. Announcement of plans for new National Museum to be built in Ottawa.
29. Final report of Special Committee on the Canadian Flag presented to the House of Commons. Appointment of commissioner to inquire into export marketing problems of salt fish industry of the Atlantic Provinces.

### November.

2. Announcement of Canada's 1965 contribution of \$7,325,000 to UN Special Fund and the UN Expanded Program of Technical Assistance. Conference opens in Ottawa regarding UN peace-keeping operations and is attended by representatives of 23 nations.
3. Defence Minister Hellyer announces mass re-organization of army reserve forces. Some 60 major units to be disbanded.

13. Canada ratifies ILO Convention against discrimination in employment for reasons of colour, race, sex, religion, political opinion, national extraction, or place of birth.  
World cheddar cheese championship won by Irving Cutt, Lunenburg, Ont.  
World championship wheat title won by Lawrence W. Gibson, Carbon, Alta., at Royal Agricultural Winter Fair, Toronto (Nov. 13-21).
18. First shipment of lead-zinc ore from Pine Point, N.W.T., carried on newly-completed Great Slave Lake Railway.
20. One of the highest unnamed peaks in Canada—near Yukon-Alaska boundary—named Mount Kennedy in memory of the late President of the United States.  
The Electoral Boundaries Readjustment Act receives Royal Assent.  
Report of Quebec Royal Commission on Education released.
25. Banks of 11 countries provide credit facilities to Britain to support the pound sterling. Canada contributes \$200,000,000.

#### December.

1. Rich iron ore deposit found on Baffin Island.  
Canada agrees to make available up to ten million dollars through the Inter-American Development Bank, to finance economic, technical and educational assistance projects in Latin America.  
Nova Scotia Government announces plans to buy 93,000 acres for development of park to be known as Kejimikujik National Park.
15. Commons votes to give Canada a new national flag with a single red maple leaf on white background flanked by vertical red bars.
17. Senate endorses flag design.  
Saskatchewan adopts flag for Diamond Jubilee celebrations featuring a red and green field with a stem of wheat and the provincial Coat-of-Arms.  
Commons votes to continue to fly the Union Jack as a symbol of membership in the Commonwealth of Nations and of allegiance to the Crown.
18. Commons adjourns the longest parliamentary session in Canadian history—214 days.
21. A five-year one and a half billion dollar equipment procurement plan for the Armed Services announced by Defence Minister.

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## Abbreviations

bbl.—barrel  
bu.—bushel  
cu. ft.—cubic feet  
cwt.—hundredweight  
ft.b.m.—feet board measure  
gal.—gallon  
hp.—horse-power  
kw.—kilowatt

lb.—pound  
M—thousand  
Mcf.—1,000 cubic feet (gas)  
mm—millimetre  
oz. t.—ounces troy  
p.c.—per cent  
sq. mi.—square miles  
kwh.—kilowatt hour

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